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SEPTEMBER 1974
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Galaxy

SCIENCE FICTION

MAGAZINE



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An Editorial Appeal

Commencing with the June issues, *Galaxy* and *Worlds of If* will begin to fully show the results of an entirely new editorial policy. For example, the combined author line-up for June reads like a *Who's Who* of the field: Isaac Asimov, James Blish, Alexei and Cory Panshin, Fred Pohl, Lester del Rey, Mack Reynolds, Fred Saberhagen, James H. Schmitz, Robert Silverberg, Ted Sturgeon, Jack Williamson—and more! No mean list, I think you'll agree.

Check the contents-pages (themselves so changed as to be virtual new features) and you will find several additions.

Galaxy: Forum, a platform for sf and/or science notables who feel they have something important—and interesting!—to convey to the readership; *Interface*, an intermittent series of interviews *cum* thumbnail biographies by Ted Sturgeon (scheduled to begin in July with an interview of Roger Elwood); *Showcase*, (also scheduled for July) a non-verbal feature—a new piece of sf-art by an acknowledged master, which has as its only justification that its creator thinks it's something special. And of course *Bookshelf*, *Directions* and *Galaxy Stars* will continue to flourish as of yore—more than yore, in fact.

Worlds of If: The Alien Viewpoint, an insider's view of sf. Crusty, hard-bitten, cynical old Dick Geis (Editor/Publisher of *The Alien Critic*) lays it on the line—his opinions are not necessarily those of the management! *Ars Gratia*, much like *Galaxy Showcase*, but for Up-and-Comers; *Future Perfect*, next issue's goodies—at least some of them; *The Editor's Page* in June is devoted to my personal favorite among the many past editors of *Worlds of If*. In future, it will be what the name implies—the editor's page. And, as with *Galaxy*, all the old features will remain in residence.

But all of this takes money, a good deal of it—and the profit motive remains an operant factor in the publishing industry. To

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*His choice was a simple one:
ultimate responsibility, or—*

THE SPLENDID FREEDOM



ARSEN DARNAY

ON HIS twenty-fifth birthday, Grom Gravok left Vizillo to go on his Maturity Trip. A delegation of elders saw him off, mostly younger men; but his father and uncles were also in the group, and so were his mother, two sisters, and Marushka, his bride-to-be. The men were misty-eyed and choked up at departure time. The women cried. Marushka cried most of all. Grom was off to the Splendid Freedom. Would he come back to her? Grom felt a catch of sadness in his throat as he embraced them all, Marushka last. Her face was salty, her lips soft, and her breath sweet. He tore himself away and ran to the mouth of the tunnel that fed the TC Liner *Malinov*. Before he ducked into the tube, he turned and waved once more. On his shoulder hung a red bag labelled Time Collapse Intragalactica.

The night before the entire *gorushka* had gathered to celebrate his coming of age. Three hundred souls, not counting children, filled the basement of Miriam Church on 38th Level. The tables groaned with eighty-five species of fish. Wine and *cicillo* flowed. The flat, the deep-bellied, and the triangulated *bululuikos* resounded with the tremolo. By midnight the men formed circles and danced the squat-kick *csardasnok*, slowly at first, hands on hips; then faster and faster; the watchers clapped their hands and cried "Hay! . . . Hay! . . . Hay!"

with every kick. Faces grew red, then purple. Total strangers came up to Grom and kissed him with tears in their eyes. "We'll miss you on the heights," they said. "Remember us in the Splendid Freedom." "The mountains," they said; "the prairies blowing in the wind. The solid land." Under the tables and in corners little children slept with rosy cheeks. The *gorushka* celebrated until dawn.

He crossed fifty parsecs in three weeks. Then *Malinov* broke from Time into Present off the moon. They landed within hours. Grom took a number for the shuttle and checked into El-tuna, the tourist class lunar transit hotel. His room was two meta wide and four meta long. One end had a door, the other a curved space-glass window. It looked out over the bright gray solidity of craters. On the third day earth rose over the stark horizon, a blue-gray spherical magnificence, its face obscured by a tattered veil of clouds.

Every twenty minutes El-tuna shook from its foundations up as the catapult discharged another ship toward the earth. The shuttle never rested; seventy-two shots a day, without interruption, a thousand souls a shot for the cheap gravity trip to the Mother planet. Despite frequent departures, Grom waited a week to make the final leg of the journey. The station teemed with humanity.

He spent his time in surface ex-

ploration. El-tuna rented space-suits for the purpose and sold maps with excursion hikes marked in a dotted red line. The space port facilities put him off. Luna station never slept. It had a worn, soiled, grimy look. In the eating places the grilles never cooled; the coffee pots forever bubbled; the plastic booths had an oily feel. He didn't dare go to the shows, even if they had been cheap. The Discipline forbade such frivolities, and the Splendid Freedom did not begin until his feet touched terran soil.

He liked the vast, solid emptiness of the moon. He took to the space-suit in no time at all. It was clumsier by far than the grav-suits he was so used to. The principles of motion were the same. In minutes he could run off the horizon and leave Luna station behind. Then he'd stop and stare at the solidity of rock dust. Sometimes he fancied he saw the surface move like a wave. Sometimes a crater lip threatened to spill over like surf. For a man from a water planet, the lunar surface wouldn't hold still, not unless he concentrated on it.

On the sixth day the red light on the intercom was on. A recorded voice gave his departure time the following day.

Splendid Freedom, here I come.

GROM GRAVOK was a structure guard. His twenty-fourth year was the last year of his apprenticeship. His training had begun at age

five. When he returned—if he returned—he'd be a journeyman. He wasn't sure at all that he'd return. Some men stayed. Some men left Luna for other places after their Maturity Trip. Grom had seen recruiting booths in the lobby of El-tuna. Structure men were in demand all over Milky Way. Not everywhere was the Discipline strict. He'd even heard of men who worked alone. How, he didn't know. But then the elders didn't tell all, by any means. The foreign pay was very good if you could believe the posters.

A structure guard worked on structures. He built them, he repaired them, and took them apart. Above all, he listened to them; he listened to them even when he had nothing else to do.

The job called for men who had no fear of heights. A good-sized structure on Vizillo reached two miles into the sky. The topmost levels basked in sunshine most of the time, above the clouds. The rich lived there. The lower stories were nearly always under a leaden sky. Vizillo was a water planet. It had virtually no land at all, and those few tatters carried structures. Vizillo circled near the sun and solar heat boiled the southern ocean up to the sky, and the winds drove the water north. The land was in the north. In the equatorial zone ship-cities floated lazily around the globe. The floaters of the South! They knew how to live.

Grom didn't know a single structure man who didn't swear he'd retire on a floater. But none ever did. It hurt to leave the structures or the *gorushka*, especially in old age.

A guard lived by the Discipline. They told you from the time you were knee-high: without the Discipline you can't survive in the job. Whether on the outside of a structure, floating free above the ocean—whose ceaseless motion froze into lizzard-skin stillness from great height—or in the deep, dark internal chasms where the gravitron vibes hummed undamped, a man had to listen with a psychic ear. Everyone heard the gross vibrations. Only guards "heard" the subtle tones of grav. It wasn't a hearing in the ordinary sense. It was a knowing. You listened for the "little ones," the "lispering." When the lispering stopped, gravitron failure threatened. If left unheeded, it could lead to structure collapse.

A structure held at least five million people. Grom had heard of structures that held three times that many, but Vizillo had no "giants." Structure guards were much revered. When a guard entered a bar, he drank on the house. Guards had to cultivate humility. Pride made you deaf to the "little ones."

He began service in a grav-suit made for a child. Loose straps tied him to his father like twin umbilical cords. He overcame his terror in a week. A few days later he'd learn-

ed to stay upright. He held tools for his father. By age twelve he heard the lispering. The *gorushka* council tested him with a little black box. Sometimes it lisped, sometimes it just hummed. He passed the test, and there was a celebration.

Discipline flowed from the *gorushka*. Vizillo was an Anglo world, but all the guards were Slaviros. Grom spoke both languages well. The Anglos called *gorushkas* "tribes," and they were that; but they were more than that. As the grav-drums in the structure generated gravitron, so the *gorushka* generated *bal*. *Bal* was that subtle unity, that sense of hearing, that ear for lispering. It came from obedience, humility, and brotherhood. What the *gorushka* demanded of its members was defenseless openness. Without it a man went deaf. He couldn't hear his own suit fail. He plunged into the depths.

Twice in his life a guard sailed off into the Splendid Freedom—at twenty-five, at fifty-five. Away from the tribe, stripped of the rules, a man could taste life as it was, unconstrained. He could test his lust for individualized existence, alone, free. At twenty-five they went to earth at the *gorushka's* expense. To earth, for earth was the supreme place of freedom. To earth, because earth had mountains, prairies, deserts. Land, land. And there civilization had created the ultimate in human choice. There a man could try everything. "*Splen-*

did freedom," the elders all said. "Oh, how magnificent is earth! You haven't lived until you've seen Terra. It's the beginning, Grom, and it's the end. Vizillo . . . why, it's a backwater."

The trip cost a hundred and eighty thousand dults, most of that for the Time Collapse journey—a staggering sum, a great gamble for the tribe. The *gorushka* worked a year to pay off the loan. Each man gave a tenth of his share. If the man didn't return, the sum was lost. If two or three went, the year was lean. Lean years, however, were part of the Discipline. But so was the Maturity Trip. Without it no man could become an elder.

ALL THIS went through Grom's head as the shuttle ship, lobbed into space by the catapult, began its noiseless journey down—or was it up?—to earth. UP and then down. It was a long trip. The *gorushka* had sent him tourist class.

"They owe it to me," Grom thought. He wasn't there yet, but the Splendid Freedom touched his face lightly, like an awakening breeze. He felt a bit defiant. He stretched inner muscles. "They owe it to me, and I owe nothing in return. I've worked on the structures twenty years. I've listened to the song of gravitron. I've slaved sometimes twenty, thirty, fifty hours on the drums without sleep. Many a time. I've floated in the darkness,

I've floated in the light, right side up, wrong side around, above the clouds, below them. Once we took a section out in the middle of a storm. The lightning flashed all around us. I think I've had enough of that life. Who wants to float another twenty years before he can escape again? Heeey, freedom. Hey, hey! Brothers and sisters, see this guard /ly!"

Then he turned once more to his much handled folder, prepared for him by the travel agency. In the upper right corner they'd printed his name in gold letters: Grom Gravok. He liked that. He'd never had anything that was quite his own, other than clothes.

He opened the folder and read at random: ". . . entrusted to the care of an experienced Terran family, knowledgeable about the planet's resources, sensitive to your needs, a guide ever on hand . . . or not. *Cozy Pak* gives you the maximum flexibility to structure your trip your way."

He closed the folder. He knew the words by heart. "Structure your trip . . ." Structures kept intruding. Thank the Cosmos they had no structures on earth.

The ship plunged into the ocean at night. It became a submarine and made for the Northanglo continent. He was asleep when they docked. An attendant shook him awake. Sir, sir.

Welcome to Earth, the Planet of Opportunity. The local time is

three a.m., oh-three-hundred for you lucky Space Marines.

They stumbled down the aisles, a little groggy. The attendants stood by the exits. They smiled and said good morning over and over again.

Grom found himself in an enormous hall: shaped concrete walls, tiled floors, and an echoing of sounds. The letters of the alphabet were hung on long rods from the ceiling against one side. They flashed on and off. Many voices, all different, called mechanically. "All B's step near." "All F's step near." He followed the sultry contralto urging the G's. He stopped at a booth beneath the letter. Near the booth on a bench sat young men and women. He showed his passport to the girl in the booth. The girl turned to the bench. "Gravok," she called. "Anybody here for Gravok?"

A young woman in slacks and a black silk blouse stirred and put out a cigarette. She blew smoke from painted lips and came to him. She had black, curly hair, green earrings shaped like half moons, green-tinted eyelids, and long red nails. She had a strong fragrance.

"Grom Gravok?" she asked. "Cozy Pak Plan? Hi. I'm the daughter of the house. My name's Ebullia, but call me Billy. Say, your name isn't *really* Grom, is it? Cluny name. Makes me think of a guy burping. You know, sort of under his breath."

"Beg your pardon?"

"Oh, never mind, Grom-sock. Pleased to meet you. Let's get out of here and get some sleep. You sure picked a time."

"My luggage . . ."

"Never mind that. It'll come by vaccutube. We're all set for tourists around here, Grommy. Say, let me call you Grommy, kay?"

And she led the way out.

Here it was, the Splendid Freedom. Three in the morning, the city still hummed with life and machinery. It was not unlike a structure, seen from the inside, but there was no gravitron song here. Nothing hung in the sky. All rested on rock, vast, solid, endless continents of rock.

They caught a cab. "Let's splurge," Billy'd said. The cab roared through a tunnel.

"Let me see your folder, Grommy. We just got the fax on you last night, no paper work." After a moment's examination—she held up the folder to see by the light of neons spaced at intervals along the tunnel wall—she gave it back to him. "Shouldn't have splurged," she stated. "My, Grommy, you're cutting it tight. This is *earth*, Grom-kid. Say, you're not one of those structure guards, are you?" And when he nodded: "Boy, will Pop be happy. Zoowishy. Zoo-zoowishy."

He awoke late the next morning in a tiny cubicle. He turned on the light and looked about. His baggage had arrived while he'd slept.

The two bags stood next to the narrow cot, beside the red shoulder bag with white letters that said Time Collapse Intragalactica. He saw his jump suit draped over what now turned out to be an old washing machine. He hadn't noticed that the night before. Next to it stood a stand with old clothing shrouded in plastic. He got up and pulled up the shade over the little window. But outside it was as dark now as it had been when he'd gone to bed. He checked his watch. It was ten in the morning—ten-hundred, you lucky Space Marines. He had expected to see land, trees. Those flying creatures that chirped should be about. The blowing grass of the prairie. Or something like that.

At the door he hesitated, hearing conversation and an unaccustomed tone. The bath was to his left. "Sand box," Billy had called it. He meant to ask her why. The voices came from the right. One of them was Billy's. He listened with the door handle in his hand.

"Bully. Bully. Really bully! Fifty thou. Forty-nine five, to be exact. I say that's bully. That's supposed to cover overhead? An A-14 Cozy Pak. Y'ever hear of such a thing? They're not supposed to sell those any more, facryn! I'll ring his neck, I will."

By the sound that followed, a fist rattled china and silver on a table.

"It's not *his* fault, Pops. He doesn't know from nothing."

"I don't mean *him*. Peter, that rat. Wait till I get hold of little Pete. Goddam, Billy, three weeks on fifty thou. That's not a lot of activities. What're we going to do with him? Jeez, bird, it's nothing. Peter radded us but good."

"You asked him to send us something, anything. I heard you on the visi."

Silence.

"Fifty thou!" The voice was incredulous but resigned. For a moment no sound penetrated two doors and a hallway. Grom smelled fried food. "Structure guards!" the voice said, in an intonation that didn't signify approval.

Grom had heard enough to be puzzled and disturbed. Fifty thousand dulls was a fortune on Vizillo.

He opened the door and went to the bath, the shoulder bag in his hand.

When he emerged a door opened, and Billy said Hi and asked him to meet Pop. Pop wore an undershirt. He was bald with a crown of hair above the ears. He smiled at Grom painfully past soiled plates that had held fried bird eggs. Grom recognized the sight and smell from the El-tuna eateries. Pop didn't rise. He dabbed ashes from a dead cigar.

"Hya, stranger. I'm the father of the house. Just call me Pop, cozy like. Ready for your first joy trip, are you? Billy!" he called, as a master calls a servant, "breakfast for the young gentleman. Sit

down . . . eh . . . Mr. Grom . . . eh, Gravok." Pop had Grom's folder to his left and read the name on the cover. "Well, how d'you like it so far? Billy! Continental breakfast, remember? Mr. Grom . . . Gravok is on A-14. A-14, Mr. Grom." He nodded, as if in approval. "Healthy and frugal. Frugality. Very important." He smiled again, as if bothered by a pain.

"You don't think fifty thousand dults is a lot of money," Grom said.

Pop's eyes narrowed. Then he threw up his hands. "You structure guards are all alike. All alike. Jeez, you come right out with it, don't you? Pow! Bang! Between the eyes." He lowered his head and looked at the yellow smears on his plate. He looked up. "Nossir. Fifty thou's chicken feed, if you must know. This is earth, Mr. Grom, not a cake sale. What'm I gonna do with you? Take you on walks? Window shopping? Look at it from my side a sec. I'm supposed to put you up, give you three changes of bed linen, feed you, give you a guide, and keep you entertained for three weeks. Billy here, she can earn fifty kay a day with a flusher, facryn! I don't know why they do this to me."

Billy served the continental breakfast: two slices of bread, a pat of butter, a disk of jam, a cup of coffee.

"Maybe I can stay in a hotel?" Grom suggested. He had a distinct sense that something was amiss.

"Zow!" Pop cried. "Oh, zow! Are you ever green, kid. Ten kay a night in a cheap place. No food. Five days and you're flat."

"It may be better to spend five days on my own than to impose on you."

Now Pop's eyes narrowed again. He leaned back and searched for matches in his trouser pocket. He said:

"Well, Mr. Grom, I might be exaggerating a little, too. It's not so bad, fifty thou. Frugal, but enough. Right, Billy?"

Billy turned from the sink. "Sure, Pops."

"We'll show you a nice time, Mr. Grom. Just like it says here in the contract." He tapped the folder with a thick finger. "You keep your side of it, and we keep ours."

"In other words," Grom said, "it's better to have fifty thousand than nothing."

Pop shook his head. Then he lit his cigar. Puffing, he said: "They ever teach you about diplomacy, kid? Pow," he said, and he shook his head again.

"I'd like to be on my way," Grom said. "We're in the middle of a city here. I'd like to get out and see something."

"Billy, come here. Mr. Grom wants to plan his day." Billy joined them at the table. She pushed some plates aside and put her chin up on her hand.

"Well, sir?" Pop asked, "what's your pleasure? Sports? Hunting?"

Historical battles? Mountain climbing? You name it, we got it . . . while the dullest last, that is. Want to ride an elephant? Shoot a tiger? Dive for sponge? What's your thing outdoors?"

"All that around here?"

"Where else? Just a short trip by the undercrust."

"Well, for a start I'd just like to look around," Grom said. "I come from a water planet. I'd just . . . oh, maybe look at the prairie . . . birds . . ."

"Nature," Pop said matter-of-factly. He looked at the ash on his cigar. He gestured with it. "Very good choice. Excellent. Frugal. Sensible. Yessir. You keep that up, Mr. Grom, and we might just skinny by. Billy, you heard the gentleman. Nature it is. Take him to his first activity."

Grom asked: "How long a trip is that? Should I be ready for an overnight stay?"

"Nothing like that. Five minutes from here."

"Five minutes? Prairies around here? I thought we were quite a ways north-east."

Pop looked at Grom with some puzzlement. "I don't get you," he said. "We've got everything around here. Prairies, jungles, deserts, mountains, rivers, marshes. You name it, kid, we've got it . . . Just don't worry about it," he continued, seeing Grom's frown. He put his cigar down and slapped the table with both hands. "Off you go,

children. The father of the house must go to work. I work at the pyramids. Ought to come see them. A nice, frugal activity, the pyramids." With that he rose. "Cheeruu," he called, and he waddled out, a short, fat little man.

THEY rode the undercrust toward the prairies. The crowded train rattled in a narrow tunnel creaking and squealing at the turns, now slow, now fast. People sat on benches, people stood. He and she hung on straps and swayed along with the car. He chewed beetle gum. Billy had insisted it was a real thrill and perkpopped you up scooroolishly in the ayem. It tasted sweet, then bitter. And judging by its effect on Billy, it colored the tongue red. It didn't perkpop him up, scrooroolishly or otherwise.

He was still puzzled by the geographical question. He thought he understood something about earth geography. Like all others before him, he'd studied an old atlas in the *gorushka* library. This vast warren was the city of Eastcoast. The prairies began a thousand miles southwest of here, in the Great Plains. Would he see a real prairie or just grasslands in the suburbs? Pop didn't inspire him with confidence. Was this a ruse to save money? He decided he'd see. Land was land. He needed to orient himself.

The undercrust was very old and

rickety. It bumped and rocked. The lights went out for seconds at a time. But now the lights went out altogether, and the train ground to a halt; they were surrounded by eerie silence.

"Zoowishy," he heard Billy say. "A zonking power failure . . . Get your paws off me, fatso," she yelled at someone, and he heard a slapping sound; then there was a sound of motion. "Runs his hams up my leg, the pig. Never fails, Grommy . . . Say, Grommy, you interested in Sensuality? It's cheap, you know, what with all the Space Marines around here. More Sensy shops than any other. Go to a sensy shop, fatso!" she yelled at someone; "that's where you should go, not molesting working chicks."

He waited until her attention was, presumably, back on him. Then he asked: "What is Sensuality? What're you talking about?"

"Jeez," she cried, "are you people sheltered! You mean it? You don't know? Oh, wow! Half the trade that comes to earth comes for the Sensy shops, and you want to see a prairie!"

"Tell me," he said. "You've aroused my curiosity."

"It's an activity, silly," she said. "You know, sensuous experience. If you're worried about it being a sin, forget it, Grommy. It ain't. All fifteen hundred major churches have filed exemptions. You don't *do* anything, but its scooroolish fun. I go sometimes on Sundays."

"But," he insisted, "what is it?"

Some of the people who stood around them, people who had enjoyed the exchange in silence, now snickered. He noticed a rise in the temperature. The cooling system had cut out. They must be deep underground.

"They sit you down and wire you up, you know, just like for a tiger hunt, or something, and then you can have a grand old time. Girls with girls, boys with boys, girls with boys, girls with dogs or bulls or . . . you know. They even have an alien booth. And it's only two hundred a sesh."

"They wire you up," he said flatly.

"Yeah. Right into your nervy-sys. You feel it like you're *it*. Wow! It's scooroolish good."

The lights came on and the car lurched into motion.

"There he is, see him? That fat pig. Yeah, fatsy, turn your head. Ought to be ashamed of yourself, pawing a decent chick."

The object of her anger, a small portly man—Grom remembered seeing him seated in front of Billy—now stood some ways farther up. He hid himself behind a newspaper. The people around them smiled.

Grom was puzzled, disoriented. He meant to ask her more about this business. He'd never heard of such a thing and much of what she'd said was incomprehensible. He'd understood the girls with girls, boys with boys part of it. The

rest was obscure. He waited for the screeching wail of wheels to stop. The train rounded a curve and ran into a station. It rushed past waiting people on a platform, then came to a halt.

"We're there," she said. "Keep with me."

She elbowed her way through the crowd, through the crush of people trying to get in. She waited on the platform while he followed. Then she led the way. He dropped his beetle gum into a pole-mounted basket as they passed it by.

They walked in a huge tunnel of concrete with a crowd of sullen, preoccupied people. Pipes passed overhead, and puddles of water or oil had accumulated at intervals. At spaced distances along the walls he saw uniform posters. Each said: "Pretty."

He pointed. "Those signs. What's the significance of that?"

"Sublimi ads." His puzzled face made her continue. "You *think* pretty, and the place *is* pretty."

"But this place is ugly," he protested. "Just look at it. Old pipes, puddles, dirty walls."

"You don't get it," she said. "It's pretty, don't you see? There. It says so," and she pointed to the signs.

Grom didn't know if he should take her seriously or not. She was a lively lass, but a little on the odd side. He expected that "Pretty" was a brand name, one she didn't know.

They walked in silence for a moment. Then he spotted, among the monotonous "Pretty" signs, one that said "Ugly."

"And that?" he asked. "What's that?"

"That's for variety, silly. Nothing's *just* pretty. That's not realistic."

FROM the large tunnel they passed into a shopping arcade. And from the arcade she led the way into a side street. She stopped before the entrance of a large, nondescript building. She looked in her purse at a slip of paper, inspected the sign above the entrance. It said, HOLOCOLOMBO N-58.

"Here we are," she announced, and she pushed her way into a revolving door beckoning Grom to follow. "Wait here," she said when they were inside the place. The foyer had red carpeting, wood-paneled walls, and dim yellow light from a chandelier. She was at a booth negotiating with a lady in glasses. Presently she was back, pointed to the left, and they were in motion.

Was this, he wondered, an elevator to the surface? He hadn't noticed that they had gained altitude since disembarking from the train. Nor, now that he thought about it, had he seen the sky since his arrival on earth. That would now be corrected.

Indeed, she led him into an elevator. She pushed some chits into a

slot. The doors closed and they surged up. Then the doors opened, and there was the prairie, just a hallway away, behind glass, an immense expanse.

"Let's take a walk," she said. She opened a glass door, held it for him, and he passed out under the sky.

The sun was bright and the wind blew with some force. It bent the knee-high grass. It chased a few clouds across the sky. The smell was overpowering and sweet. He didn't know the names of these plants, but there was a profusion of them, and their scent was something very new.

He walked out a ways, brushing the grass with his hands. Land. So much open land. He'd never seen solidity from here to the horizon, a gentle rolling landscape, some small hills in the distance, a little village, tall storage tanks of some sort, and a truck on the highway half a mile to the left. He looked back at the glass-fronted building they'd just left, a one-story structure above the surface. To look at it, Grom couldn't have guessed the enormous underground complex below.

Billy had joined him, and he turned to her now.

"Beautiful," he said, "really lovely. I'll take you up on it. Let's go on a hike."

He strode out to his left, toward the highway. First he'd explore a bit. Then he'd collect some flowers



Blessings on the heads of science-fiction fans. They are the marvelous people who supply true and valuable scholarship in the field. While the academic types are analyzing such things as average number of words per sentence in Asimov's writings or finding new meaningless labels to fit sf in into the mainstream, the fans are publishing indices, concordances and mammoth encyclopedias—and these are the works that will be useful for generations.

One such is *A GUIDE TO MIDDLE EARTH*, by Robert Foster, which we are publishing this month. Here is the "one" book every devoted Tolkien reader needs, indeed has to have—a complete guide to Tolkien's fantastic universe. All the people, places and events in *THE LORD OF THE RINGS*—from Adaldrida Brandybuck to Zirak-Zigil—are identified and described in detail.

Best of all, we think, page references to LOTR are for the Ballantine edition of the trilogy. Our beautiful Tim Kirk cover is really a preview of the 1975 *TOLKIEN CALENDAR*—featuring thirteen full color paintings by Kirk of scenes from the Tolkien masterpiece. A collector's item if ever we saw one!

• • •

Also in August we have *LEST DARKNESS FALL*, L. Sprague de Camp's classic time-travel story of modern man's confrontation with the ancient world. One minute Martin Padway is casually ambling through modern Rome. In an instant he is inexplicably hurtled back through time to 6th-Century Italy—just before the Dark

Ages. With one foot firmly rooted in the 20th Century, and the other planted tentatively in the Gothic Era, Padway—now MARTINUS PADUEL, QUAESTOR—has quite a problem. "All very entertaining," says The New York Times, "This idea is endlessly fascinating." We think so, too!

• • •

ALPHA 5, edited by Robert Silverberg, is a superb collection of science fiction by some of the most respected masters in the field, and also some of the most promising newcomers. Delany, Wilhelm, Effinger, Miller, Dick, Leiber, Clute, Sturgeon and Dozois—presenting visions you have never seen before . . . places you have never dreamed existed . . . and ideas that will send you away transformed.

Ballantine's marvelous sf titles are on sale wherever paperback books are sold—And especially in two terrific stores that sell only sf and fantasy. In Los Angeles there is something called CHANGE OF HOBBIT [1101 Gayley Ave.] . . . Sherry Gottlieb is the lady in charge there. And north of the border in Toronto, you'll find BAKKA [282 & 284 Queen Street W.], where Charles P. McKee presided over the store's 2nd anniversary in May. Belated felicitations!

• • •

Booksellers are our favorite people—not least flakey Kay Sexton and her crew at the Dalton Stores. They know science fiction is best! BB

for Marushka. Billy might know if the little village had a place to eat. They could have lunch there—

Grom suddenly found himself surrounded by darkness.

The shift was so sudden he caught his breath with a small exclamation. A sense of terror filled him, but it was dispelled when he heard Billy.

"Oh, croak," she cried. "Another power failure. Oh, Grommy, you should make them pay for this. They owe you double your money back *and* a free activity. All you have to do is fill out the forms. And your first time, too!"

His eyes became accustomed to the darkness. The darkness was not total. He could now make out glowing signs in four places. They said, EMERGENCY EXIT. The placement of the signs told him he was in a large room, but not very large. Perhaps thirty meta in width, fifty long. He reached down to touch the vegetation. It was still there, but the wind had stopped blowing, and he could already sense the growing heat.

"Get me out of here, Billy," he said. "Let's go somewhere where we can see and talk. And then you tell me all about it. Every last bit."

"Zoowishy," she said, genuinely disappointed. "Zoo-zoowishy. I'm sorry, truly sorry. Your first activity. What a zonk."

"I HAVE the feeling that there's something about earth I don't

understand. Or maybe it's Cozy Pak Plan I don't understand. Or maybe you don't understand me."

They sat in a coffee shop at a two-scater table, she on the upholstered plasti-leather bench, he on the chair. The management provided a candle in a glass, whether for atmosphere or to anticipate power failure he didn't know. Probably the latter. For atmosphere the place relied on sublimi ads above the purple bench-backs: "Pleasant Service, Friendly Feeling." On either side of them were many two-man tables occupied by people eating lunch.

Billy smoked a cigarette she'd lit on the candle in the glass. It was oval in shape and very long and blended strictly for working chicks, the reason she didn't offer him one; besides she guessed he didn't smoke. They were called "Oh-Vuums."

"No," he said, when she began with "Jeez—," "don't tell me. Let me ask you some questions. But just answer the questions? Please?"

"It's your nicky, Grom-kid."

"What did I see back there?" He gestured vaguely.

"A nature activity."

"How'd they make it so real?"

"Holograph projections. Oh, Grommy, don't you *know*? Where did you come from, anyway?"

"Just answer the questions, Billy. Pretend I'm stupid. Why did you take me to that . . . activity? Why not to a real prairie or park?"

"Real?" she asked.

"Real. Real grass, real sky, real sun. Is it because you don't earn a commission on the real thing?"

She was offended, angry. Who'd he think he was, insulting a working chick, etc., etc. plus a set of slangy exclamations and expletives. The real thing! Where'd he think he was? On a new planet? This is earth, Grom-kid.

"What do you mean . . . this is earth?"

"Kay," she said. "You *are* dumb. Ain't been any *real* thing on earth for centuries. You think our big skulls invented all this marvel stuff for fun? You realize what *one* Sensy booth costs to build? Forty-eight." She flicked ash angrily and fixed him with those green-lidded eyes. "Million. Four eight. Million. That's what. You can see it all here. Everything that's ever been on good old Mother Earth. All the old battles, all the sights. Pop told you he was Pyramids! Didn't you hear him? You can do it all, Grommy. *Fight* the battles, *thirst* in the Sahara, *sleep* with Merrilyroe, *eat* a shark, *be* eaten by a shark. You can eat a thousand meals and never take on a single calo. You want to be drunk and not be hung over? Milk a cow? Fall into a volcano? You can *do* it here, *feel* it, *see* it. The whole thing, Grommy, and you want the *real* thing!"

She was very offended.

"Zillion zillion trillion billion

dulls or something. That's what it cost to build all this." Her hand swept around to indicate 'all this.' "Why'd you come here if you think it's all . . . nothing. The *real* thing!"

"I didn't say it was 'nothing,'" he soothed her. "I didn't *know*, is all. It's a custom in my tribe not to tell us what it is. Earth, I mean."

"Didn't anybody tell you? On the ship?"

"I hung about with other structure guards. I heard this and that, but I didn't put it together. I'm a simple man, Billy. Vizillo is a small, backward planet . . . Tell me, Billy. Is all of earth like this? An underground city? Does anybody live up on the surface?"

"Surface? Naw. It's dangerous up there. No life at all."

"And Africa, Euras, Astra? Cities like this on those continents? All with these activity theaters?"

She shook her head and turned to a serving girl who had appeared and stared at them grimly. Her starched apron had rust stains; her black skirt was short over fat rumps. "A skinnibug and a glass of Mu for me, Chick. Grommy? The same." The waitress left, having said nothing at all.

"Nothing on the other continents?"

"The only city on earth is Eastcoast, and Eastcoast has everything that's ever been. Only better."

"Excuse me, Mister, I overheard you say you come from Vizillo. I

meant to ask you—"

"Hands off, freak, he's mine by contract. Back to your soupy-soup and mind!"

Billy spoke sharply to the man at the neighboring table, a skinny fellow in a turtleneck. He had a day's growth of beard. He'd leaned over, had put a hand on their table.

"I'm sure the gentleman can speak for himself, chick."

"Oh, no you don't!" Billy bristled. "Nossir! Grom-sock, tell this mooch to skoot off."

Grom shrugged and looked at the man. "I don't know the customs here. I don't mean to offend, but . . . skoot off."

"Scavengers!" Billy scolded. "Not enough to go around as it is, for decent folk. Eight million people, three million visitors, less than one for three, if you read me, Grommy. And the big tour shops steal most of those. Little people can't make it any more. There's talk of advertising all the activities. They say there'll be directories and all. Pop and I couldn't make it then."

"There is no Mom?"

"Mom couldn't take it. She blasted off-planet when I was a sock."

"How *do* you make a living?"

"It's like this, you see," she said. "Only the guides know where all the places are. We take the mark—" She stopped and gave him a glance, started over. "We take the guest to the places where he

wants to go. We get a little cut. But the big tour shops are taking over. They bring a hundred people at a crack, cut the commissions. We get squeezed. And you can't just blaze off like that. What'd we do off-planet? Pop and I? All we know is the activities. And guys like this cut in on you, tell the guest they know some place the guides don't know about. You get it both ways. Pow! like Pop says. Between the eyes."

Grom sensed her dilemma and began to feel sad for her, but he rose up above the emotion out of old habit. Pity destroyed *bal*.

"You're a super guide, Billy. You'll make it," he said.

"Jeez," she cried, pleased. "How can you say that? Your first activity and I blew it."

"You're great at explaining and you know everything," he said. "Tell me, Billy, of my fifty thousand, how much will you earn?"

"Six hundred and ninety-six," she said at once. "The ninety-six is for your keep, the six hundred is commissions."

"And what if I don't go to any activities?"

Her face fell. "Zoowish," she cried. "What'd you do?"

"I don't know, but I want to ask you that too. Would you get some money, commissions?"

"How?" she asked. "No activity, no commission. It's your nicky, Grommy. You spend it, you keep it. It's up to you."

She was very gloomy.

"I don't have any money. You've got it. A letter of credit, I think they called it in the folder."

"It's still yours. You can cash it all in, if you want to. Any office of Banco Galactico will give you the loot in bills."

He mused over that for a second.

"You don't want to do that, Grom-sock. You won't have anything to do. You'll wander through the pretty corridors and look at shops just like those you've got at home . . ." Her voice was small. She dug into her purse for Oh-Vuums.

"I expect to have plenty to do," he said. "And I'll make sure that you're not hurt, no matter what I do."

She was unsure. She looked away from him. "Where are those skinnies?" she asked. "I'm starved . . . I blew it," she said, and she blew smoke at the candle. "Your first activity, and they short it out. Oh, mush."

He reached out and touched one of her hands. "Listen, Billy. It wasn't your fault. And besides, I didn't come to earth to go to movies."

"They aren't movies!" she protested, but he cut her off, squeezing her hand.

"Listen, Billy. Movies, holograms, it's all the same. I want to go to the surface."

"Wow," she cried. "You must be reeling."

The expression on her face was

so astonished, he decided to drop the subject for the moment.

INSTEAD, to give her a pleasure, Grom agreed to try another activity in the afternoon.

This time *nothing* would go wrong.

They'd get away from Nuyo burrow where the power always failed. Wadicy station was much better, she suggested. Did he know? Wadicy had been a great capital in the ancient days. It'd been called The Great American Dream, though search her why an empire would be called that. All that was left of the ancients was part of a radiation bunker. And guess what? Billy's eyes lit up. She warmed to the subject. She displayed her know-how with evident pleasure. In a glass case in the bunker Grom could see the last surviving imperial book; not a fax, not a reconstruct, the *real thing*. It was the report of a commission on some important subject. "See," she said, "I know some things that aren't activities. But first we'll take in something real scoroolish, kay?"

They discussed what he should do munching the skinnies and sipping Mu through straws. Grom was used to fish fare and life-produced protein. The skinny tasted like space-ship food and had been grown in a yeast tank. He didn't want to disappoint his guide by asking any questions about its origins.

First she explained the difference between static and dynamic. She used one hand, holding a bite-disfigured skinny, to indicate the one; the other hand, which held the Mu, to indicate the other.

Static was what he'd already seen. You walked about in them and looked.

Dynamic was where they wired you up.

Dynamic was what he'd have to try. She insisted on it.

In the midst of a long listing of different activities, to each of which he reacted neutrally at best, she suddenly cried:

"I've got it, Grom-kid! I've got it. I'll take you to a potpourri!" But then her face fell. "Aw, I guess not—it'll run you a mint. Pops'll skin me." Then her face brightened again. "But its the greatest zap-peroo there is, Grom. If you like Dynamic, that is."

"If you say so, Billy, I'll take you to a potpourri."

"Me?" she protested. "You can't do that. That'll wipe you out." She lowered her eyes. "I've never been to one before. Cause of that." She looked up. "Ten," she said, fixing him with green-lidded eyes. "Thousand. For you and me. Together."

Grom laughed. "It's only money, Billy. Let's go."

Wadicy was an hour away. They got there in a much better train. It rode on air, went deeper and faster, and they had to strap themselves into cushioned seats. All the way

there, Billy fluctuated between delicious dread at the prospect and eager expectation. Grom gathered that potpourri was not only scooroolish, it was also zanyshivereeee!

The show lasted long hours, and in the process the day fled. They emerged in the early evening. They were both silent for a long time.

"I've never been through this before," she said at last. They stood on the platform waiting for the train. "You were sweet to buy me a chit. Potpourri is a trip. A real trip. But I don't think I'd ever do it again. It's too much. It makes you feel old. Afterwards, you know."

He nodded but didn't say anything.

In the Wadicy potpourri theater, you could relive the entire life of a man, a woman. The specialty was ancient history. You could be the man, the woman of that time. It all began with birth and ended in death. In the four hours that intervened came the cargo of a lifetime's feeling, a flashing of vast events—loves, hatreds, strivings, failures, the hubris of success, the dread of loneliness and neglect, infirmity, sickness, destitution, charity, senility, the end.

Grom had been a journalist who'd become a soldier, then a general in a terrible war. He was in China and Arabia, in Washington, in Paris, all around the globe. He negotiated a peace that wouldn't hold. He had sweethearts and a wife and a child killed by napalm in

a campus riot. He wrote a book. He was member of a cabinet. A madman gunned him down in front of a court house but he recovered with one arm lame. A committee investigated him for corruption; he was guilty, found blameless, yet forced to resign. He became religious and rose high in the ranks of a new church; but he lost all of his conversion love in vicious hierarchical fights. He was banished to an island and ministered to primitives. A shark bit off his lower legs when he dived for sponges to supplement his income. As he grew old, a native matron ruled him and ruled in his name with small-eyed cruelty. He tried to escape and on the fourth try succeeded. He died on a raft on the ocean in an ecstasy. He thought he was God.

Grom had left the building empty. He was not himself. The calm sense of *bul* was gone or stirred to such an extent he couldn't orient himself in the world. Like water in a jostled bucket, so his emotions slapped the sides of his soul and spilled over. He was two people: Grom Gravok, structure guard, and that strange adventurer, so filled with titanic desire, John Singer of the potpourri. The two couldn't be reconciled. The tension lamed him.

The real thing? Whatever it was that he'd experienced, it was the equivalent of reality.

He didn't know who Billy had been or what she had experienced;

but the effect of the potpourri on her was much the same.

They rode home in silence, strapped into cushioned seats, lost in ancient yet very recent memories.

GROM went to bed in the narrow room, next to the decommissioned washing machine, the stand with old clothing, certain that by morning he would be normal again. He awoke eight hours later still disturbed by the very real presence within him of another person, John Singer. His nervous system couldn't distinguish between the two sets of memory. But Grom Gravok, the structure guard, had gained a little strength. He knew he had to get away from here somehow. He had to find himself again. He yearned for the serenity of *bal*, trembled with basic anxiety. No gravitron drums turned anywhere on earth. Still he knew that he couldn't have heard the "little ones." And that knowledge made him extremely nervous. His body shuddered with dread. Structure collapse could be advancing all around him, without his knowledge.

A strangely serious, taciturn Billy took him to a branch of the Banco Galactico. She said nothing while he cashed in his letter of credit; not a word of protest escaped her. She had also changed her appearance. Her lips, eyelids were no longer painted. She had washed the curls from her hair. She wore a wide skirt and a sweater. She had neglected to

squirt perfume behind her ears, in the crook of her arms.

Thirty-three thousand dulls were left in his account. He folded the blue bills away into a zippered pocket of his suit.

Over breakfast in an eatery, he told her what he wanted to do.

She took note of it, thought for a moment, checked her watch; then she explained how they would proceed. They went home and packed over night bags; she left a recorded message for Pop; then they caught an undercrust local to another station and arrived just in time for the only transcontinental train of the day. He put their bags in the overhead rack, her blue one next to his red one with the stencilled words—Time Collapse Intragalactica. They strapped themselves in and were soon in motion. A very slow start, almost a creeping, became a headlong rush as the train descended very deep into the bedrock on its air-cushioned course.

JOHN SINGER had experienced his conversion in a small cabin, in an out-of-the-way valley of the Rocky Mountains, near a town called Henderson, in what had then been called the State of Colorado.

He had retired there for a long vacation after his ouster from the government. He went there to lick his wounds, to think things over. The cabin belonged to a friend of his. It was remote and primitive. Singer had to fetch his water from a

well and to burn wood in a stove to keep warm.

Grom Gravok had experienced Singer's conversion as if it had been his own. For a few months, a very few months, Singer had felt what Grom considered a natural state, the peace of *bal*, although Singer had called it by another name. That segment of experience united the two personalities. Singer caught in the gossamer threads of spirit and Grom Gravok in his natural state were basically the same man.

When Grom had awakened the morning after his experience of the potpourri, two distinct urges had impelled him to go to the surface. He wished to be free of Singer's oppressive psychic presence, and to do so he thought he must see for himself the spot where God's finger had touched that ancient. At the same time, Grom wished to see earth, the real earth, not an underground city. Eastcoast and structures had too much in common. Grom longed above all for the sustaining, subtle support of the *gorushka*. If he couldn't get that, he wanted solitude.

He learned from Billy that one could still go to the mountains. Earth had its outposts all about this and the other continents—small groups of people who watched the planet and charted the storms that raged above, sampled the atmosphere, measured crust tremors, dipped probes into the sea. Slowly chaos pressed in upon the remnant

of humanity. The outposts watched the steady progress of the inevitable.

Someday, Billy had said, there would be no more people on earth. The oxygen will have been fixed.

They hurtled toward one of these outposts. Den Station in the R-range.

The train drove deeply under the continent in a tunnel carved by plasma and shaped like a slack hose, one end attached to Eastcoast the other to the underside of the mountains. The train fell down, almost, moved by gravity. The inertial energies of the fall carried them up again toward the surface as the tunnel turned up.

"So they did learn to do it after all," John Singer thought, thinking with Grom's mind; or was this Grom's thought reflecting Singer's memories? In Singer's day such trains were seen as utopian dreams. "Some utopia," John Singer thought, reflecting on Grom Gravok's memories. Or was it the other way about?

Grom found it confusing to be two men. But Singer's memories were useful. He understood a great deal now he hadn't grasped before.

They fell for two hours and rose for two hours.

Grom felt no discomfort. His body was accustomed to all kinds of gravitational effects. Billy seemed unwell on the way down, but she stirred into life on the ascent when the natural gravity bit into their

bodies and they could unstrap and move about.

"You're my last visitor," she announced suddenly after a long silence, stirring coffee a girl had brought them on a tray.

"Oh?"

"I haven't lived," she said seriously; her entire manner was different now. She was resolute and determined. "I didn't know it before, but now I do. I'm leaving earth and heading outward, just like Mom."

"How'll you do that? I thought you were . . ." Grom didn't want to say "poor."

"I'll find a way," she stated. "Mary always did!"

"Mary?"

"Mary O'Gronsky. Mary never hesitated. She'd just step right out, right into the darkness. Something always happened."

"I take it Mary O'Gronsky was the girl whose life you . . .?"

She nodded, lips over a raised cup. She set the cup down and took a puff on her cigarette.

"I'm very big," she said. "I've seen many things. Earth is too small for me. Jeez, Grom," she cried, and the momentary flash of enthusiasm recalled for a second the Billy he knew, "you've no idea how *big* the world is. And here I was, hustling in a very narrow track, day after day—vacu the place Saturday mornings, a Sensy show on Sunday afternoon, and grinding, grinding on the old cir-

cuit. I'm twenty-eight," she said; he didn't know if it was an accusation, a boast, or a statement. "Never!" she said. "Never again." She looked at him as if she expected contradiction.

But Grom said nothing. Her stare recalled another woman, his wife (John Singer's wife), who on the occasion of her twenty-eighth birthday (they were flying to the Bahamas for a vacation) had quarrelled with him (with John Singer) about the number of children they'd have—she'd wanted none. Joan had been a criminal lawyer. She'd divorced him after she gave birth to Annie. Marushka wanted five children, all boys.

He fell into a reverie about Joan and Marushka and Annie all intertwined while Billy went on, asserting her own future, expanding its proportions, explaining the many alternate paths that lay before her still, each beckoning for exploration, despite the fact that she had nothing, was twenty-eight, and couldn't possibly imagine the first step toward her goal. But Mary never let herself be stopped. Mary blasted rock when the way was barred. Yessir!

Den Station in the Rorange received them with suspicion. They had been the only passengers on the train to disembark there. A man had to unlock a gate to let them into the building from the platform. He asked them to come to his office, which they did; Grom

carried their bags—her blue one and his red one. The man sat down behind the desk, took off his glasses, polished them, and asked what their business was here. They stood before him, hadn't been asked to sit down.

Grom felt strong, overpowering irritation. He was John Singer, not Grom Gravok. Grom would have suppressed such emotions long before they could gather force.

"I want to take a look at the surface," he said with a voice devoid of any supplication.

Well, now, the man replied. Slowly, a little slowly, here. Did Mr . . . ? Mr. Gravok have the requisite permits from DOS? (DOS, Billy whispered, was the Department of Safety.) Without such a permit, of course, the trip had been wasted. The man breathed on the lense of his glasses and, polishing, looked up.

"I don't have any permits, so I guess you'll just have to make them out, here and now."

"Me?" the man said, incredulous. He put on his glasses to see this person better. "Me? Mr. Gravok, you labor under an immense delusion—"

Grom turned purple. "Get on your feet, creep!" he thundered, entirely possessed by another. "Who do you think you're addressing, anyway? Can't you recognize a cabinet official when you see one? Start writing or you'll regret you ever laid eyes on me."

The little man, whom John Singer (if not Grom Gravok) had recognized as a minor bureaucrat, came to his feet. Behind the eyes now showed fear. He murmured apologies. He hesitated. Then he sat down again, dove into a drawer for some forms, and began to write hastily. It was his job to act quickly. Discrete inquiries could be made afterward or, better yet, not at all.

Minutes later, armed with forms and instructions about the whereabouts of lifts, Grom and Billy were in yet another concrete corridor. Grom's face was still an angry frown.

"Cabinet official?" Billy asked.

He looked at her. He was jolted, confused. "I . . . I . . ." He gave it up and simply shook his head. In truth he was mortified by his aggressive behaviour, and his body pulsed with the unaccustomed discharge of hormones he hadn't known he had, and he longed to be rid of John Singer and the terrifying slavery of John Singer's compulsive drive. Was this what they called freedom?

From a large encavement on which numerous buildings fronted and from which other corridors led in all directions, they took a right-hand path to a smaller square. Here they entered a facility where attendants equipped them with suits, masks, and auxiliary oxygen devices. They signed for small homing radios, were given maps.

They affixed their signatures to liability waivers that freed Den Station of any responsibility should they be lost. They paid the lift fee of five-fifty each. Then they were shown to the elevators and went up, very high up, in Grom's estimation; which was a way of saying that they'd been very deep undercrust. And then, from a dark and narrow concrete bunker, he stepped out to the surface—the real surface this time, not a holographic mirage.

AND he saw nothing at all. Or rather, he found himself in a violent wind storm. The wind blew, blasted, raced, cut, shrieked by him at an unbelievable velocity. It tugged him, pulled him, jerked him and yet pressed him back. The wind was laden with very fine yellow dust. In seconds it powdered over his suit and visor. Despite the tightness of the suit, a bitter taste formed in his mouth. He wiped his visor and saw yellow, hurtling yellow all about him.

Grom turned back. He barely saw Billy in her dark blue suit. She stood uncertainly in the low bunker's rectangular opening. He stepped back and took her hand. Then, together, they pressed into the wind.

He felt her resistance almost at once. Her body seemed to tremble, and the trembling came to him through her hand, through the glove. He held her left. With her right hand she fumbled on the

buttons of her belt-mounted communications pack. The noise was so great that unaided speech was impossible.

Static crackled. "Oh, Grom, I'm scared!" he heard her say.

"Hold tight. You're safe. This wind must be gusting. It should relent. Let's walk a little."

He pulled her along, carefully feeling his way over rough, rocky terrain while she repeated that she was terrified.

The wind *was* gusting. From time to time its intensity subsided, and then they saw churning clouds and swirls of yellow dust laced with brown dust and whitish dust and black spirals of dust.

Whenever the wind took a breath, she seemed to relax a little.

They walked on, slowly, and as time passed he felt the wind die. Suddenly it stopped. It left vast tons of dust in the air which now began to settle slowly like a very fine misty rain.

As fog lifts so the dust settled. Minute by minute the view cleared. At first they saw dark, grey rock to the right. Then more rock piled behind that, and rock above that. It rose higher and higher. It was wild, eroded, chiseled rock, mountains sliced thin and ground to circular posts, flat tables, intricate tracteries that recalled hot lead poured into water.

But it was the endless plain to their left which caused Billy to panic. Like Grom she had watched

the dust veil drop over the remnants of Rorange. Then they both turned in the other direction. Here was a limitless expanse of dust arranged in fantastic, numberless, sharp-edged dunes. Very far in the distance a falling veil of dust precipitated down from a yellow sky.

And from that direction they now saw the lightning-rapid advance of another fist of wind. It punched through the veil and ripped through the dunes. It came toward them, a dark ball of elemental force, driving planetary sediment.

Billy screamed, turned, and ran toward the bunker, whose roof was unevenly laden with dust as if with snow. She stumbled and fell. She clawed herself upright. Grom heard her sobbing panic over the radio. She ran for the safety of the little concrete outjutting. He followed her slowly, already battered by the wind.

Billy cowered, sobbing, by the elevator, her clumsy gloves placed in pleading on the door.

He tried to coax her back to rationality, but she was beside herself, incoherent, and utterly panicked. At last he rang for the lift. When it arrived he half pulled, half carried her on.

They went back down.

THE following morning Grom said good-bye to Billy at the train station.

They shook hands, and he handed her the little blue overnight bag.

On an impulse she embraced him and pecked a kiss on his cheek. Her eyes glistened.

"I'll never forget you, Grom-kid," she said; her voice was husky. "You've given me a new life."

He shook his head. "God be with you, Billy. I gave you and you gave me. Such is life. Now follow through. Do it. Get away."

"I will," she sobbed.

"Like Mary would. Courage. Don't be held up by anything."

"I promise."

A girl-attendant at the train's door beckoned. Billy looked at him again. She shook her head, filled with emotion. Then she turned and got on. She waved to him as the train pulled away.

"Zoowishy," he murmured to himself, smiling. "Zoo-zoowishy."

Then he went back to the hotel.

He inspected the gear he had bought the day before, following that abortive stay on the surface: a tent, a mattress, a carrypack; food rations, a moisture-capture, a stove; rope, heavy socks, thermal underwear; a compass, maps, a strong radio; and various other odds and ends suggested by John Singer's memories or a store clerk torn between pleasure at Grom's big purchase and wonder at the visitor's overvaulting madness.

Grom packed his gear, shouldered the load, and set out for the surface again.

He had resolved to spend his remaining time up there, in the awe-

some wilderness of the surface. He'd known he'd do it in that moment of stillness when the dust had settled revealing the Mother Planet's ravaged face. Alone, up there, seeking *bal*.

He had bought the gear alone, unaided. Billy had been hysterical. He'd taken her to a room in Den Station's only hotel aided by a heavysset matron with warts and a nearly full mustache. And when the officious, suspicious matron had at last left them alone, he'd consoled Billy in a way John Singer would have approved and that Mary O'Gronsky had known how to appreciate. He'd told Billy of his intentions as they lay together watching an artificial sunset projected on the wall. Then he'd gone shopping. After breakfast the next morning, he gave her twenty-five thousand dulls—so that she might get free and fulfill her dream, or Mary O'Gronsky's dream, or both. Grom didn't care. In his life money didn't matter; nor did John Singer give a damn. Singer had created fortunes and he'd lost them, like the snap of a finger. To Singer money was a means. Grom kept enough to get home. He already had a ticket. Or if he chose to wander, enough for a start somewhere. The rest would manifest somehow.

Whether he'd go back to Vizillo or head out for parts unknown—that was the question he'd answer up there.

Bal would tell him. If he couldn't

find *bal*, he probably wouldn't come back down again.

THE wind howled and then it settled again. It rolled up ten thousand carpets of dust and flung them into the sky. Sometimes it was still for days on end. In the sky tiny particles of silicate drew sunshine into multichrome reflections. Sometimes water clouds filled the sky and it rained; it mudded. Torrents of mud ran. Rivers of mud; angry, yellow-foamed rivers that bared the rock, that boiled and roared and fell over the cliffs with a thunder of a few hours and a slow, oozing drip of days.

Grom wandered.

He went up, into the Rorange. He saw forests of petrified wood. He saw art so strange only the unencumbered freedom of wind blast could create it over centuries. He saw lakes and pools whose water was bitter. He saw tough, rocklike vegetable scum clinging for dear life to rock, to occasional mudriver beds. He saw needles of stone and spires of stone and temples of stone. He saw boulders balanced on needles of stone and needles balanced on boulders.

He wandered, but with a system.

He sought with compass and map the spot where John Singer had been touched by the Divine finger. There was no practical sense in the search. Since Singer's day the Rocky Mountains had been so utterly changed Grom didn't recog-

nize the place nor the maps that gave him an overview. He couldn't be sure where that spot was. There was no common point of reference except Den Station, in Singer's day a major city. One point. Not enough except to aid a guess. Yet Grom searched. He knew he'd know the spot. And if it wasn't *really* that spot, it didn't matter. God was everywhere. He interpenetrated this dimension. The value of the exercise was that it gave Grom things to do—map study in the tent at night, compass readings in the day time, measuring and charting with a grease pencil on a plastic overlay.

He reached the spot on the tenth day out. He camped near the edge of a funnel-shaped valley, a triple column of stone behind him, the remnants of Tomichi mountain (he guessed). Across the funnel was a wall of rock. It seemed he remembered that wall. In Singer's days it had been higher and pines had run like a line of soldiers right to the edge of it. An over-eager soldier or two had tumbled down and caught himself in cracks and crevices. That red was the ancient red. That grey with a nose shape the ancient nose.

He stayed for three weeks. Or possibly only for three days. Time was meaningless here. He wandered about. He ranged far from his camp. Slowly, very slowly, he began to feel like himself again.

After ten days, or possibly two,

he got the notion that he'd find a souvenir for Marushka. This mission began to fill his waking hours. He searched and searched. Something very, very ancient. Something of real value. Something they'd encase in clear glass and place next to the *gorushka* shrine in their cubo-home. Something that would be a memento of his Maturity Trip and yet a gift from him to her. Something they'd show to the five children Maruska wanted, all five of them boys, all five structure guards with clear ears for the lisp of gravitron.

He wandered about with a small pick axe and dug here and there, lifting and piling the dust—loose on top, packed deeper, then almost the solidity of rock down below. For a long time he found nothing.

Then one day he lifted a flat-pressed cake of dust and saw the corner of a something with a dull, metallic sheen. He freed the something. It was a piece of light, malleable metal ironed flat by pressure. Aluminum, by the feel and look. Once it might have been cylindrical in shape. It was only part of a cylinder, torn from a cylinder. The pressure had forced wrinkles into the surface.

He carried his find to the tent. He washed it with sweet water from the moisture-capture. He polished it with one of his heavy socks. He examined it in the beam of a flashlight. With tremendous joy and excitement he then saw the faded

trace of very ancient letters. Singer's memories allowed him to decipher the sound. The letters, a mere discoloration on the metal, a faint but unmistakable impression or chemical change on the surface, said "Coca ola." Faintly Grom seemed to recall the significance of the words, but his Singer-self was receding. The new yet ancient memories did not come as readily any more. All that was left of Singer was a feeling—a strange, troubled, sad feeling of something that had longed, hated, suffered, and passed on.

He wrapped the metal in one of his shirts. He tied a rope about the shirt to secure the metal. He placed the shirt at the bottom of his pack. Then he cooked himself a meal on the stove and went to bed on his mattress.

The next day he awoke with dawn. The day was still. The sun gleamed in the silicate suspension of the air.

Grom distinctly felt in his heart the peace of *bal*. A limpid harmony.

He broke camp and set out for home.

THE rest was a movement in reverse. A long journey through the wilderness. A descent into the underworld. A train ride in a tunnel shaped like a slack hose.

He called Billy by visiphone. A recorded voice told him she was no longer listed at that code.

He splurged on a cab ride to the space port.

El-tuna received him. He hopped about on the lunar surface for a day. Then the TC Liner *Belfortuna* carried him over fifty parsecs from Earthmoon to Vizillo.

At the space port a delegation of the *gorushka* waited to receive him, all elders, mostly of his own age. His father and uncles were among them. His mother, sisters, and Marushka were there, but they stood back, away from the men.

He looked at the elders and saw anxious expectation on their faces. He ran toward them, a red bag over his shoulder with the words Time Collapse Intragalactica stenciled on it in white. He embraced them and shook hands and greeted them. One of the men said:

"Grom, brother. So good to have you back. But tell us, what did you think of . . . earth? The big world? What was it like?"

Grom examined his questioner and sensed worry in the man's voice. He realized then that he too must act like an elder and say the traditional words, the words that hid so much agonizing experience under a blessing.

"Splendid," he said. "Splendid freedom. Oh, earth is magnificent. The land, the mountains, the prairies. It's the beginning, Tushka, and it's the end."

The elders beamed. Grom broke through them and ran to Marushka. ★



*All pigs are created equal—
equal to some people, in fact!*

NATURE'S CHILDREN

—or, as ye reap,
so shall ye sow!

Doris Piserchia

ALPHONSE Durham didn't turn in to a pig overnight. The transformation came about gradually. Tall, portly and easy-going, he sometimes worked hard at his job in the lumber mill five miles down the road from his small farm. For some unknown reason, he started to shrink a bit in stature. He put on a great deal of weight, made it a practice to snap at his family and began demanding breakfast in bed when he ought to have been out punching a time-clock.

Everyone in the family, especially Lovina, his wife, wondered out loud if Alphonse was becoming a lazy hog. Part of the truth was that he was afraid to get out of bed and go to work. He wasn't sure he recognized anybody at the lumber mill now. Within a period of a few weeks all his friends there had become strangers. They didn't behave the same nor did they even look the same. Alphonse suspected that they were no longer quite human. Instead of talking they grunted, and instead of eating their bag-lunches in a civilized manner they dumped the food in the sawdust, made an outer circle with their fat rears and

had a communal-type repast.

It didn't make sense and Alphonse was doubly perplexed when no one in the household mentioned that the town was occupied by a lot of funny people who walked around on all fours. This might have been accounted for by the fact that his family seldom went into town. Alphonse stayed in bed, worried, ate ravenously, snapped at his wife and children and generally endured his existence.

Now that he had so much leisure time, he could see how the farm had gone to pot. Lovina obviously wasn't carrying her share of the load. The house looked like a pigsty, the fence around the property needed repairs, the animals weren't being fed on time, the crops were ready for harvesting while autumn storms threatened—the damned place was going to the dogs.

"Oink, oink," said Alphonse.

Take himself, for instance: He was being neglected. Lovina had it in her to be an excellent cook, but she was feeding him slop. At dinnertime he lay in his bed (which was getting smaller by the day) and agonized over the odors drifting in

from the kitchen. Every evening he waited in anticipation for his share of the farm booty, and just as faithfully Lovina bore in a scrub bucket filled to the brim with potato and carrot parings, corn cobs, chunks of fat meat, wormy apples and dish-water.

"I want some decent food!" he finally bellowed, whereupon Lovina brought him a mirror and invited him to look at himself.

"I don't care what I look like, I want to eat like a man!" he yelled.

She brought him man food and he found it impossible. The beef-steak felt like rocks in his mouth and tasted rotten, the gravy smelled to high heaven, the ice cream hurt his teeth. He couldn't eat any of it.

"Give me back my slop," he said, and got it, and enjoyed it.

Eventually he grew so fat he had trouble turning over in bed. When the springs broke and the mattress landed on the floor he didn't bother trying to fix them, just slept the way he was and found it comfortable. He discovered that looking in a mirror was an interesting way to spend his time. Once in a while he tried to shave but the bristles on his jowls were too tough and ruined his razor. He ran out of toothbrushes because he couldn't resist eating them when they were laden with sweet toothpaste. Only rarely did it occur to him that he was getting sloppy and disgusting, and then he would lie and stare at the wall and wonder what was happening to

him. In the meantime he was plagued with a terrible desire: He wanted to join the pigs in the pen in back of the house.

The sanitation problem in his room grew so bad that his children no longer came in to say hello or goodnight or to borrow money. Alphonse didn't mind. His esthetic tastes were altering along with his body, and, much as he hated to admit it, he liked what pigs liked.

ONE DAY he broke through a wall of his bedroom and joined the pigs in the pen. They all rushed over to inspect him. A huge black and white sow named Gertrude leaped astraddle him and bit his neck. A small gray boar who had been trying to immobilize the sow against the fence knocked her off Alphonse and attacked him. Bigger than all of them, Alphonse beat the boar into a whimpering hulk after which he located Gertrude who was hiding beneath the feed trough. He made her come out and then he took a good look at her. He knew what he wanted to do but he wasn't enough of a pig to go ahead. Rutting wasn't the only thing in the world, surely, even for a pig, and besides this was the most revolting female he had ever seen in his life. As he turned away from her, he was confident that nothing in the universe could make him mount that creature. Five minutes later he did. He couldn't help himself. There were eight sows and five boars in

the pen. He beat up five and mounted eight.

He found the psychology of pigs easy to understand. Being uncouth and spiteful was practically the only way they could find diversion. A sow might be lying on a dry piece of ground, basking in the sun and minding her own business, when a boar came along and rolled her in the muck. Later, as the boar was having a snack at the trough, she might very likely climb into it and crap it up. Invariably he waited until she decided to try a little sunbathing again at which time he promptly rolled her in the muck.

Alphonse had gotten into the pen by crawling under the fence. He got out the same way at nightfall, went back through the broken wall of the house and slept on his fallen mattress.

In the morning Lovina brought him his breakfast. "Where were you yesterday? I couldn't find you anywhere."

Alphonse merely said, "Oink, oink."

He ran into a problem later in the day when he went to join the pigs in the pen. Overnight he must have gained a few more pounds and now he was too fat to crawl under the fence. He solved his dilemma by hunting until he found a weak place, crashed through and was safe inside with Gertrude and the rest of his friends. A while later Lovina came out, saw the pigs running around loose, chased them

back into the pen with the help of Spark, the dog, and then she ran barbed wire along the broken areas. Alphonse couldn't get out to go back to his room.

The next morning Lovina came out to the pen and stood for the longest time, staring in at the pigs.

"No one would blame me if I said I didn't know which was you," she said.

"Don't play games," said Alphonse.

"If there's any man left in you, you'd better talk. You think I didn't see what you did yesterday? You should be ashamed."

"Come on, be a sport and let me out of this sty. I've had enough for today."

Lovina rested her elbow on the top of the fence, supported her chin in her hand and stared at the huge white boar who stood in the muck and stared back at her through ugly little eyes.

"You can't talk, can you?" she said. "All you can do is grunt. Hell, that's all you ever did anyway." With Spark close beside her to keep the boars away, she let herself into the pen, walked to the big white pig, grabbed his ear and led him outside.

After he had gotten comfortable on his mattress, Alphonse said, "I'm sorry, I really am. It's the first time I've been unfaithful to you."

"Oink, oink, that's all I hear," said Lovina. Starched white apron, starched red shirt, jeans, dark hair

in a tight bun, dark eyes flashing warning signals from the smouldering mind behind them, she stayed by the door as if loathe to come near the snorting wheezing animal whose rump made a dent in the wall while its hoofs pointed straight at her.

"You're a pig," she said. "Nod your head if you understand me. Good. I was sure you could. The other pigs understand English; the ones who used to be human. It's happening all over the world, even to most of the older children. Latest estimates say about one percent of grown males haven't changed."

"Oink, oink," Alphonse said wearily. He was interested in what she said but he was tired, hungry, disgusted, despairing, and—he was exultant when he thought of other happy days in the pen. He liked being a pig more than he had liked being a man. But such a thought was dangerous.

"Help me, Lovina, I'm failing fast," he said.

"Everything is going to hell. The world might stabilize eventually, since lot of women can do their men's jobs. And maybe it only appears that everything is in an uproar. There's a possibility all this is an hallucination. Most of the experts say so."

"Oink, oink, they're wrong."

"Don't shake your head. What can a pig know?"

"Pigs are intelligent."

"Try to stay in your room," she

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said. "Don't go back out there."

"Is that all you can do to help me? Just talk? What if I told you this thing with Gertrude is getting out of hand? For God's sake, I think I'm falling for her."

Lovina couldn't understand him. As soon as she left, Alphonse went out to the pen. Lifting the bar of the gate with his snout, he let himself inside, hit the gate with his rear so that it slammed shut and made the bar fall. So relieved was he to be free of the stuffy house that he decided not to fight with the boars, even had kind words for them. They had been born to be slaughtered, they were harmless and not at all bad-natured; they were friendlier to him than people had ever been and they weren't critical bastards who strove for success by climbing across bodies.

"You make me sick," said Lovina, when she came out and found him there. "I try to be objective but it doesn't work. I don't know what my reaction will be when Gertrude has her litter."

SHE kept him posted on what was happening outside his small, carnal universe. Approximately one percent of mature human males were not pigs. They couldn't do much to assuage the world's pain because they weren't leader-types. To a man, their personalities forbade the public limelight. They couldn't even be relied upon to attend important meetings. They

were maddeningly independent and, though willing to help the women in any way possible, they mostly stood around and confessed they didn't know what the hell to do.

Big business had failed; small business was stumbling along. Each community took care of itself and expected others to do the same. In big cities the pigs were corralled in public squares and details of women kept them fed and watered while other details took charge of supermarkets and rationed out food. A mass exodus west before the snows came was planned. The pigs would be the first to go, in trains and trucks. Large details of women would accompany them, settle them down on abandoned farms. Later the other women would join them and everyone would try to survive and establish some kind of workable society.

The problem of food was always present in every group. In open country it wasn't too serious. Most human pigs were identifiable by tags pinned to their ears. A person or group desperate for food chose untagged pigs for slaughtering and hoped they weren't doing away with somebody's relative. Certain people said only injured or aged pigs should be used for food. Others objected and after much discussion it was decided that a man was a man whether he was old or damaged, young or whole. Dinner pieces were selected at random and only

when the diners were satisfied that the victim was a stranger.

Psychologists were vocal, speculated publicly and privately: Men had turned into pigs because of a virus; the transformation was an illusion; visitors from outer space were responsible; someone had contaminated the world's water systems with a drug that altered chromosomes; the situation was a psychosomatic phenomenon. Endless causes, but no cures were mentioned.

Alphonse Durham changed back into a man because he decided he didn't want to be a pig. The fall days on the farm were perfect, as far as the weather was concerned. The food trough was always full because Lovina was generous and conscientious. The pen was warm and fragrant, the sows were amorous and pregnant with Alphonse's children. But he missed his human children, his four daughters, his disappointments; he had always wanted at least one son. But he missed his daughters who had run away from home weeks before. Lovina missed them too. They were big girls and able to take care of themselves but they were hers and every day she told Alphonse how much she wanted them back.

The transformation of pig into man began when he realized how unnecessary his complex mind was becoming. What pig needed so much intelligence? The murdering knife was the man-made destiny of

swine, the sun and the trough and mucking were their pleasures, and they had no use for much of anything else.

Once he started thinking about Lovina, he couldn't get her out of his mind. Had he been human and carried on an adulterous affair, he surely would have done it in secret. Here he was, mucking around with eight holey swine while his wife worked hard to keep him alive. When she had been compelled to slaughter one of the animals for food, she hadn't taken Gertrude, nor had she chosen any of the sows. Instead she took the gray boar Alphonse disliked.

As for Gertrude, she had no couth, was ready to roll or eat or sunbathe with the same enthusiasm. She didn't care if she were doing one or the other or all three simultaneously. Stupendous feats were within her capacity, but mostly because she was all gut and no brains.

Alphonse didn't think he had lost any of his reasoning power. Probably he had but it didn't seem to matter. He could still figure things out. A pig wasn't a human in any way, shape or form. Living in a pen was boring. Satisfying the appetite got monotonous after a while and there had to be virtue in cleanliness and order, no matter how alluring filth and slovenliness appeared. Pigs simply didn't do anything important.

"What are you doing in here?"

said Lovina, walking into the bedroom that evening. It had been clean when Alphonse came in earlier but now it wasn't.

THE repaired bed had been broken again.

"Oink, help."

"You spoke!" she cried.

"Oink, ugh, my God, oink, oink, I wish I could die."

Total reversion from pig to man took place within a few days, a much more rapid change than the original which had been slow and insidious.

Men began popping up all over the world, not a great many but enough to convince women that the male of the species was again going to be significant. Radio stations and TV programs recounted the stories of the reborn. They were horror stories. Nervous, shivering males told the world it was hell to be a pig. They described how desperately they clung to the memory that they had once been human, that when the final vestiges of humanness began to disappear in their thoughts, they rebelled. What kind of revolt was it? Oddly enough it started in the viscera, a nauseous sensation that progressed to a complete rejection of their environment. Thoughts of the sun, the filth and their companions made them sick. They had foundered on satisfaction. Conscience, or reason, clamored. They were what they were, no matter how they

looked, and when facade threatened to supercede reality an inner defense mechanism punctured the fog and the desire to return to manhood was activated.

Alphonse was a man. "I'm never going to be a pig again," he said to Lovina. "If you can forgive me I'll do everything I can to make you happy."

"I never knew one person could make another happy. It sounds like a lot of output on one side and intake on the other."

"Do you forgive me?"

"I don't know, but it probably doesn't matter. If you weren't special I never would have married you. Now that you're human again, I realize how much I missed you. You're a handsome man, Alphonse, and you're fairly well built. I like the way you walk, and there are other things."

"But those things aren't the reason you're glad I'm back."

"The main reason is sex appeal, whatever that is."

Whatever it was, the second honeymoon didn't last long. Alphonse made himself into a rug and Lovina walked on him, reluctantly at first and then contemptuously and then brazenly. The mill wasn't operating so he took over the farmwork—all of it. And all of the housework. He did everything; he even served Lovina her meals in bed.

"You're going too far," she said.

"I'll never be a pig again."

"There's a variety of animals on this planet."

Gertrude was traded to a farmer in the next town for a black boar named Max. The seven remaining sows were also traded for strangers. Alphonse felt better about slopping the pigs after that.

Every day he sprinkled Lovina's body with oil and gave her a thorough massage. She did no work that might have strained her in any way, but he didn't take that into consideration. He was a changed man.

"You're a very equal person," he said, patting her fanny. "In fact, you're so equal I'm actually inferior."

"You're beginning to make me uneasy. Can't you just be plain old Alphonse and stop worrying about pigs?"

Shuddering, he stroked her back. "This thing isn't over yet. I want us to survive. I think we really and truly love each other and something tells me that's important."

"You're sounding more like a simpleton every day. Don't rub so hard and use a little less oil."

"Civilization has about had it. We might all cash in our chips if more men don't come back. Two hundred million, scattered over the world, aren't enough to repopulate, let alone help rebuild."

"Sounds like a lot to me," said Lovina.

"Not when a big percentage of them are young boys. The others

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have got to come back. Women need men."

"And vice versa."

He bent and kissed her neck.

"Go away now so I can have a nap," she said. "Don't forget to take care of the hay, cotton, chickens, pigs, goats, and milk the cows, feed the cats and dogs, make the butter and ice cream, and for God's sake clean the house a little, won't you?"

WHEN he brought in her dinner tray one evening, she inspected the food with a scowl. "Don't we have any potato parings?"

Nearly dropping the tray, he stared at her in astonishment. "Say that again."

"This stuff gives me indigestion. Why can't you fix anything decent? I have a craving for peelings and corncobs and maybe some chunks of fat meat and some wormy apples all mixed in dishwater."

The first thing Alphonse did was to hurry into town and try to find a doctor. He needed help. Someone had to come out to the house and stop Lovina from becoming something else.

The doctor was in her office, but she was a pig. The ticket-taker at the seedy theater on the corner was also a pig. So were the checkout clerks in the town's only store. So were a lot of other women. So was Lovina, as he discovered when he went home.

"Oink, oink, help!"

"Fight it," said Alphonse. "Do something before it takes hold."

"You did it. It's your fault. Oink, oink, oink!"

"There's no one to help me. All the women are turning into pigs and there are about two hundred men in the whole damned state! Christ, there won't be anybody left!"

He was almost right. About one percent of mature women remained human while approximately twenty percent of the human male pigs had reverted, so about twenty one percent of the formerly-human population were now walking around on two legs. Even faster than before, the world skidded down the slide toward another Stone Age.

It didn't take Lovina long to leave the bedroom and make her initial pilgrimage to the pigpen. Alphonse did what he could to prevent it; the outsides of the bedroom walls were latticed with two-by-fours. He regretted his lack of imagination when she exited the house via the hall, taking several doorframes with her. She might have earned a record for being the fattest pig in the world. Alphonse was six feet tall and weighed two hundred pounds. Lovina used to be five-ten and had weighed one-sixty. As a pig Alphonse had tipped the scales at nine hundred. Lovina was every bit of eleven hundred pounds, the biggest, whitest hog Alphonse had ever seen.

He stayed by the fence and stood guard. Whenever the boars tried to approach his wife he fired his rifle into the ground in front of them. This procedure consumed most of the afternoon and he was forced to think of the coming night. Would Lovina return to the house or stay here? Finally he lassoed her around the neck with a thick rope and tried to haul her through the gate. She backed up and pulled him into a mud puddle.

Max, the black beast Alphonse had acquired from the farmer down the road, immediately mounted Lovina. The five other boars got in line behind him. As Alphonse staggered toward the rifle, Max abandoned his amorous position and charged, reached the rifle first, grabbed the stalk between his teeth and broke it. Giving Alphonse a glare from his ugly little eyes, the big boar returned to Lovina and proceeded to beat back his competitors. Max was no pig. He was a man who looked like a pig. A black man.

It wouldn't have mattered if Max had been white. The fact that he was a man-pig was what enraged Alphonse. Plus the fact that Lovina was so enthusiastic about being had by everything in the pen.

Alphonse got a club and started beating heads. Most of the pigs ran through the open gate and headed across the open fields. Lovina and Max stayed inside, coupling. Alphonse went after them. Before he

reached them, he turned into a pig. His rage had blown his mind. He was all emotion now and wasn't aware of his transformation as he leaped through the air and sank his tusks into Max's shoulder.

The black boar screamed and fell onto his back. Alphonse tried to gore him in the stomach. Max took one look at the size of his opponent, leaped to his feet and sped out of the pen.

Alphonse gored Lovina's thigh, tried to knock her down, bit her, shrieked in pain when she took his large scrotum in her teeth. Abandoning that vulnerable spot, she raked her teeth across his chest, left bloody furrows.

They battled in earnest, jowl to jowl, eyes engorged and furious, their grunts and growls not mere threats but savage promises. He tried to down her but she downed him. She attempted to break his leg with her teeth but he escaped by goring a deep hole in her side. He went in for his kill and she ripped away a large chunk of his throat. Their blood soaked the ground, mixed with the mud, clouded their vision, sprayed the air, but they didn't stop fighting.

He knocked her flat, saw her head crash into a crimson pool. She ripped at him until he fell beside her, his body leaking red from a dozen gashes.

"I'm trying to kill her," he thought dazedly. "My wife. We're trying to kill each other."

"Alphonse," she whispered weakly.

He crawled until his nose touched hers. He wept and his tears mingled with hers. They sobbed because of their own wounds and because of the wounds they had given each other. She licked his throat where she had given him a nearly-fatal bite, he licked the hole in her side. Exhausted, bleeding, they lay and tried to comfort one another.

ALPHONSE felt a consuming desire to kiss his wife. He raised his snout and found himself staring into a human face. Lovina had turned back into a person. So had he. The damage they had sustained was still with them. Both were weak and bleeding and torn.

Neither of them could walk. They crawled to the house, closed the front door, lay for hours on the living room floor until they regained enough strength to tend to one another's wounds. They didn't speak, avoided glances, touched reluctantly and by and by Alphonse went into one of the bedrooms and Lovina didn't follow. She went into a room of her own. When they shut the doors they shut more than just two panels of wood.

Alphonse wasn't certain as to exactly when he turned back into a pig. It might have been a week later, it might have been longer. The first several days were hazy and pain-filled for him. He slept a great deal and occasionally forced him-

self to go out to the kitchen for food. Lovina stayed out of sight. He washed his wounds every day, changed the bandages, staggered to his bed and slept some more. All the while he listened for some sound she might have made, but he rarely heard anything. Like he, Lovina was keeping mostly to her room.

And then one day he turned into a pig. He wasn't expecting it. His mind had begun to function again and he thought more about his own situation than he thought of what had happened. Eventually he resented his solitude, his fear and his discomfort. It had to be at least partly Lovina's fault.

A week later he stood on all fours in the opening of a cave and stared down into the valley where the farm sat. There was no movement, the house was dark, no smoke came from the chimney. He knew Lovina couldn't be down there. She had turned into a pig, too, at about the same time he did. Both of them ran into the hills. She was probably in one of the caves on the other side of the valley.

Tears leaked down his face. There was no place to go. He had already tried the town. A few people lived there but he was afraid to approach them. As for the pigs everywhere, he often saw them but they ran away from him and each other. No doubt they were all like him now, terrified and lonely and beginning to suspect that the end of

the nightmare lay inside themselves.

Alphonse stared down at the farmhouse. Was it possible humanity was an imaginary figment? Where was the proof that there really had been such a thing as the human race? The people in the town? No, that wasn't proof.

"Oink." He said it, and it scared him.

"Don't be a fool," he told himself. "Of course there's a human race. You were once part of it and you can be again. All you have to do is find your human self."

In the middle of the night he became a man. He had been lying with his snout pointed toward his home and wishing he had someone to talk to.

A while later, he turned the doorknob and walked into his house. He lit a lantern and set it by the front window. Wandering from room to room was comforting. He touched things as he had never touched them before. The books on the shelves in his room were real because he understood them. His hands enjoyed the feel of paper and cloth. The bed felt soft to his thighs when he sat on it. He liked the way his feet met the floor as he walked. The air he breathed was good, food was soft and tasty and revitalizing, silence was—no good.

SHE SCRATCHED at the door about midnight the next evening.

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"The light. I saw it and knew you were here. I don't know what I'd have done if I hadn't seen it."

"You don't have to whisper," he said. "Come in."

She hesitated. "It's because I'm afraid."

"So am I. Let's have dinner together."

She was naked. Going into her room, she shut the door and stayed away a long time. When she came out, she was dressed.

"What took you so long?" he said.

"I was looking at everything. It's new and different, isn't it?"

"Yes."

They had a meal together. Staring at him over her coffee cup, she reached out and laid her hand on his.

"We're in danger," she said. "It can happen again."

"I know."

"Why?"

He shook his head. "That I don't know. I think it's probably simple. We either get along together or we'll be back up in those hills."

She shivered. "We've been living together for thousands of years. Scientists say for millions of years. We built a civilization together. No matter what anybody says, we stand or we fall together. There can't be any other way."

"You don't think it'll be different some day? Maybe science will fix it so women won't have babies any more. Maybe men and

women will be exactly the same."

"No," she said. "We're two of a kind but we'll always be different. Why does that have to mean we'll fight?"

"That's too hard for me to answer."

He knew he would have to answer it some day. He knew it then and he knew it a month later when he stood on all fours in the cave opening and stared down at the house. The lantern in the front window was lit. Lovina was down there, telling him to come home.

How long would this go on? Would they keep changing into pigs? They met, ate together, even made love, talked, talked, talked, and it was the damned talk that kept making pigs of them. Because they couldn't speak without thinking. So it was the mind that had to grow up.

It didn't just happen when he was with Lovina. He had met a man and their conversation changed them both into grunting swine who ran away from each other. Just a brief talk with a man. How to think, how to bring the human to top level, how to be master of one's own soul—a condition to live for. Do it or die squealing that the world was a puddle of muck.

HE STARED down at the bright window and he wept. "We'll do it!" he cried. "We have to do it right, Lovina. If we don't, we're finished." ★

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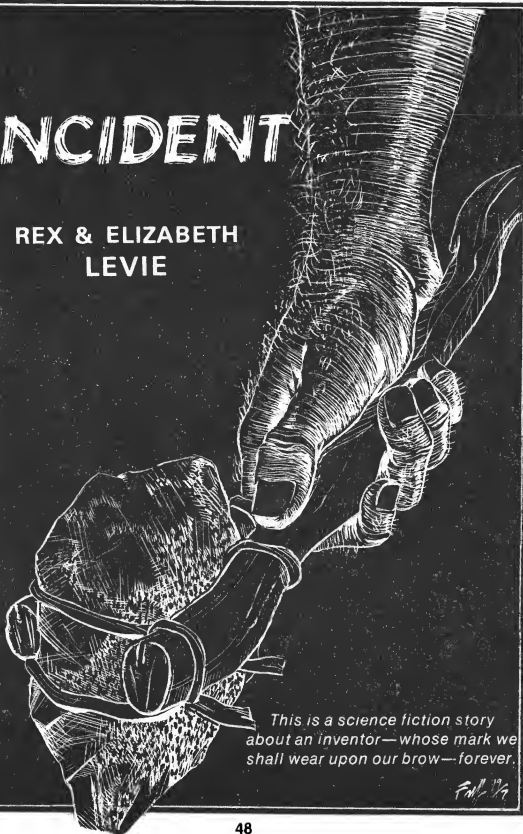


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Fall 1969

UNTIL he heard the leopard cough there had been only the pain of his broken arm, firmly pinned by the crotch of the driftwood that had sheltered and carried him across a hundred miles of veldt before the flash flood had sunk enough to let it ground. Now, there was pain and panic. He moaned in terror, flailing at the branches, starting a fresh flow of blood from the torn flesh. Either the blood helped, lubricating the skin and bark, or he had grown more desperate. His arm slipped, still trapped, but turning in the taper of the fork.

The terror still lay upon him, but the panic had ebbed. He turned farther, whimpering as much in fear as from the agony in his crumpled arm. Finally, by twisting as much as possible, he could just flip a foot against the far bough of the trap—then he could walk up until his back was to the main trunk, and both legs were bent double overhead, feet pressed against the pinning branches. It took almost his full height before he could overcome the spring of the wood, force loose the wooden jaws; then he was free, falling back against the trunk.

He lay for a moment before rolling over in the direction from which the sound had come. A quarter of a mile away, the cat was moving, silhouetted against the gold-washed evening sky. It was heading away from him, moving in an easy

lope along the far bank of the wide arroyo.

The light breeze carried the faint, musky stench of the cat to him. It had neither seen nor scented him—but he knew that if the wind changed, the blood-odor would bring it back. Worse, it was almost dark—things other than leopards hunted the haunted night. He could not stay in the tree, and there was nowhere else to go. The limestone caves where the hunting packs bedded safe in their numbers were a hundred miles distant—even farther than the spot where he had gained the trees scant yards ahead of the cloudburst-fed wall of water that had come snarling down the ravine.

But he could not stay in the tree; he dropped onto the gravel of the streambed, stood trembling for a moment, shaken by the drop.

IN THREE million years his children would be men. He foreshadowed those years so well that his descendants would argue whether he should be named *Australopithecus habilis*, the last of the not-quite-men—or *Homo habilis*, the first of the true men. He stood upright, nearly hairless, and below the heavy eyebrows, the face was startlingly human.

The effect was strongest in his dark eyes, alive now with fear and pain, flickering over the rocky walls as they sought shelter or weapon.

The too-heavy chin, the abrupt curve of the forehead, were muted by the heavy shock of hair and beard, while the thick black curls on limbs and torso accented the brown skin without covering it.

He had no name—it was still too early for individual designations. Not quite Adam—that honor went to others, earlier—but Adam's firstborn. Let us call him Cain—as good a name as any.

Cain, then, stood in the bed of the wash. The thirsty sun and greedy sands had sucked away the flood, but a few pools remained, and he knelt to drink, cupping the water in his good hand as he watched for the leopard. The wash was paved with stream rounded pebbles, mixed with jagged chunks pounded from larger stones, and he chose one with a fairly sharp edge. Should the leopard—or worse, a lion or hyena pack—appear, it would be a feeble weapon. But better than none.

He was climbing the bank when he saw the bone. Longer than his forearm, ending in a heavy double joint, the half-buried leg joint was a weapon—the weapon of his kind. He lusted for it, and clambered over the shifting sand to pull it free. He was swinging it, testing the feel, when the hunting cat returned.

Cain screamed in terror as it snarled and leapt, the bank adding momentum to its flight. Rolling away from the slashing claws, he flailed wildly with the bone club,

then there was a tearing at his back—not the smashing blow he expected, but a futile grasp for footing, and the bone was gone, wrenched from his hand. From the bottom of the bank came choking roars, as terrifying as if the cat were still upon him, and he lay, his face pressed earthward, until the sounds died and he could nerve himself to look.

Not quite yet a leopard—larger, fiercer—the cat lay sprawled at the bottom of the arroyo, the first rigors of death touching paws that still clawed at the bone club jammed down its throat with the full force of the spring. Scrambling down, Cain cautiously bounced a pebble off the spotted hide, then another, before gaining the courage to approach the carcass. He would have fled, but the lure of the club was too great.

IT WAS slow work to free the club, and it was almost dark when he succeeded. He had to find shelter. He was too sick to travel far but the club was at least psychological support. His homing instinct turned him back up the wash. The leopard had made enough noise to draw any predators within miles, and he was alert for any sign that the cat's death howls had brought a lion or a second leopard. He was not prepared for what came instead.

He did not see the line of heads until it had grown to a row of up-

right, five foot forms, shadowed against the fading golds and glowing purples of the sky, atop the bank. There was time to run a dozen paces, then a well thrown rock caught him behind one ear, sending him crashing, face down, into an almost dry puddle. Consciousness remained only long enough for him to sense the approach of the line down the slope toward him.

He woke with the panic still upon him, too weak from loss of blood to do more than whimper and toss feebly. It was day, but the light was shattered into a dance of shadows, and he slowly realized that he lay beneath a large thorn bush, the light flickering as the canopy of leaves fluttered in a gentle breeze. The blood had been licked from his torn arm, and he had been placed in a hollow scooped from the sand and lined with coarse grasses and leaves.

The panic passed slowly, to be replaced by fever, pain, and an ever-growing thirst. As the morning passed into the heat of afternoon his fever deepened. He could smell water nearby, but he was too ill to attempt finding it.

The female came at evening, bending over him to spit a sip of lukewarm water into his dry mouth. He almost gagged on the sudden gush of liquid, then managed to swallow. She waited patiently to finish passing the mouthful of water, then left. Weakened beyond

fear, Cain could only whimper after her. She returned with a second mouthful, cooler than the first, and an over-ripe fruit. He took the water, but pushed the fruit away. She grunted, ate it, then withdrew, leaving him to lapse back into a fevered sleep.

The fever worried at him for three days, trying to tug away the slender thread of life, then slunk off, defeated, to leave him to two days of healing sleep. The female came two or three times a day, licking his wounds, or picking out the maggots after the flies found him. It was not mercy—the maggots were promptly eaten with great relish—but it aided his healing. The rest of the time he slept, waking only to accept water. The broken arm was mending. If he lived until it healed, it would be crooked, but useable.

On the sixth day, he had recovered enough to become aware of his surroundings. The thorn bush reached the ground about him, hollowed in the center, with a single opening kept stoppered with a ball of dead branches. It had enough worth as a shelter to permit a frightened Cain to lie and peer through the leaves as a lioness prowled through the clump of bushes, unable to do more than snuffle and growl in frustration.

His hosts—or captors—were almost as human as he. Any of the several children or younger females would have passed easily enough in

the caves—although their faces were flatter, with longer jaws and more sharply canted foreheads. But the two males he had seen were giants—a foot taller than Cain, who was tall for a hunter—and the muscles of their unbearded jaws were so heavy they formed visible ridges as they worked at chewing the heavy roots and tubers that were the staples of their diet. There were no signs of serious hunting, or even of meat eating—a good sign, though he could not interpret it. It made it less likely that he was to be eaten.

SEVENTEEN million years before, the Miocene jungles had stretched to Lake Victoria in a chain of swamps interspersed with open savannahs and forested parklands. Here, long before Adam, other, earlier ancestors had browsed the shores and forests of Eden, or waded into the swamps after worms and shellfish. Somehow, one had changed. Perhaps moving into deeper waters forced him upright, hair that could catch clogging mud falling away, hands to capture slippery mollusks developing.

Later, when the fiery sword of the Pliocene had dried the lands, sending those early hominidae forth from Eden to labor in the sweat of their brows, there had been a second change. Lost in a past so distant as to be beyond comprehension, a beast had bent to pick up a stone.

A beast had bent. Adam arose.

And Adam had two sons: Cain, the first born—a hunter of the beasts of the field. And Abel.

He came on the eighth day, following the female into the ring of thorns to squat in silence while she licked Cain's wounds clean and gave him a small, sour fruit. Larger and heavier than Cain, Abel shared the same bright gift of intelligence. He, too, carried a weapon—a fist-sized chunk of rock, roughly hacked to a point, and loosely carried in one massive hand. When the female finished Abel rose to a crouch and began to prod and pull Cain toward the entrance. Resisting at first, then slowly crawling on one hand, the smaller man followed the female down the short tunnel while Abel brought up the rear.

Once they were both in the open the giant helped the hunter to stand. Cain swayed for a moment, sick and dizzy, half blinded by the unfiltered sunlight. Abel waited for him to recover, then urged him forward between two bushes into an open stretch of gravel-strewn sand, in the center of which was a small, spring-fed water hole surrounded by plants. Kneeling, Cain drank, eyeing the other cautiously as he did so. Abel merely stood by, silently watching. The female was gone.

Reassured, Cain studied his surroundings. Two of the bushes facing the spring were hollowed, but empty. Farther down the small stream that ran from the spring to

vanish in the sand, a group of females and children were grubbing at the vegetation that lined the banks. He could not count them—his concept of number stopped at three—but they were not many. There was no sign of the second male he had seen earlier, nor of the female who had tended him.

When he had drunk enough, he stood, and Abel approached, pushing him back toward the bush. The larger man did not follow him within the ring, but closed the entrance from without, leaving Cain in solitude. There were several roots on the ground beside the sleeping nest—coarser stuff than he had been given before, and he put them aside. A quick circle of the bush brought a low mewl of pleasure as he found the bone club where it had been carelessly discarded. The feel of the heavy bone restored his confidence and spirits as he squatted beside the hollowed nest, scouring the weapon with a handful of sand.

He did not wait for Abel or the female to appear the next morning, but pushed the plug aside himself and crawled into the open, dragging the club behind him in his rapidly mending left hand. Moving behind a bush, he scraped a hole in the sand and relieved himself, then walked down to the water hole to drink. He was bent at the edge of the spring when Abel and the second male emerged from the shelter nearest the clearing, hand-stones grasped easily in their fists.

Shifting the club to his right hand, Cain tensed, but there was no sign of hostility from the giants, nor any sign that they found his presence disturbing. They reached the water a few feet away, one drinking while the other stood, then changed places. When Abel rose, Cain rose also, falling in beside his brother, but leaving a respectful ten feet between them. Abel continued to ignore him, and the other male watched for a moment, then lost interest and walked off.

They passed through the ring of shelters (avoiding the children being herded out by the females) and into the desert beyond. Although shorter, Cain easily matched Abel's waddling stride. Cain's children would one day be men—Abel's never.

ALREADY, Abel had taken a wrong turning, moving into the bushlands to live on the roots and tubers he found there—while Cain had remained on the open veldt, turning hunter to survive. Now the drought struck into the heart of the bushlands, drying streams into washes, replacing lush vegetation with the hardy thorn bush and cactus.

Roots and tubers became scarcer, tougher to chew. Jaw muscles changed to meet new demands, body chemistry to wrest nourishment from lower-grade food. The drying-death continued

with calm, steady ferocity as the millennia of the Pliocene slowly unwound; the bush had become a trap. Abel and his kind were dying.

Cain did not realize they were hunting until they actually flushed game—a small rodent that darted from cover to scamper across the open sand toward its burrow. There was a flash of motion as Abel slung the stone in a sidearm throw, sending up a shower of sand a few inches ahead of the cony. The rodent gained its nest and went to ground, and Abel grunted and went to retrieve his throwing stone.

When he returned, Cain was searching through the groundcover beyond the burrow, and the smaller man grunted, pulling aside a bush to reveal a second entrance. As Abel came to watch, Cain rose, barking a command that could be roughly translated as 'watch the hole'. The giant made a soft sound, but did not move. Cain repeated the command, then gave it up. He lacked the sophistication to realize that there might be differences in language, but he could tell the other did not understand. He changed to sign language, patting the ground and acting out what the other must do.

Abel watched the performance impassively, then his eyes lit and flickered to the first hole, and he knelt. Returning to the entrance, Cain began to pound the ground with his club, tracing the windings of the hidden burrow. He was half-

way to Abel when the hyrax emerged from the bolt-hole in a flurry of motion, and Abel swung his stone. He came to his feet, holding the bloody rodent, his face a mass of ridges and hollows as the heavy muscles folded into a grin. Cain grinned back, then both men chuckled and moved off toward the water hole—still separated, but by five feet rather than ten.

A second male was recruited and trained, and at day's end they had perfected the technique of clearing burrows. The entire colony gathered an hour before sunset to feast—meat enough for even children to taste. For Cain, whose jaws were never meant for chewing bulbs and roots, it was survival.

The drought had been no kinder to the smaller beasts than to the larger. The conies were eaten raw, and nothing wasted—but there was little meat. Cain would need many more to regain his strength—to get them, he must greatly improve Abel's hunting skills.

He could not gather a full hunting pack—even including the females and children, there were not enough of the gentle giants to work after the manner of his kind. But there were other ways, and he had seen signs of easy game around the water hole. The problem lay in communicating with Abel.

He began the lessons the following morning, leading them after a larger burrower that would someday be an aardvark. The technique

was a variant of the one already taught, and he was content to lead, leaving the killing to the two giant males. They returned in triumph with their prey, and Cain was mildly interested to note that the giants skinned out the aardvark with the same hand-stones used for the kill—a task which he would have done with the knife-like lower jaw of a small antelope or deer.

Flushed with the success of the hunt, and with the heat of noon upon them, Abel demurred from any further effort, leaving Cain to his own devices. Restless, he wandered through the camp, exploring. The females were again digging along the stream, using the hand stones—this time as picks. Pointed chunks of rock were common enough in stream beds—he used them himself for simple tasks if they were at hand. But these were strangely sharp, and he was vaguely puzzled to notice that they were all of a size and shape. The stones added force to a blow, and the giants could throw them with fair accuracy, but he dismissed them as generally inferior to the club as a hunting weapon—but the stones had other uses.

HE CAME upon the female who had nursed him working alone at a thorn bush. The thorn-ring sprang from a central stem, and she was using one of the hand-stones to hack away the tough deadwood clogging the space be-

neath the arching boughs, slicing the stems free and discarding them. She stopped as she saw Cain, smiling shyly. He instinctively recoiled as she approached, extending the stone to him, but she smiled again and repeated the offer.

Dropping the club, he accepted the hand-ax, turning it to examine the edge. The picks he had seen were hacked to points—this had a row of jagged edges, stained now with sap. The material was shiny where chipped, and cool to his grasp—heavy, but not awkward.

The female made a soft sound, her smile widening into a grin, and mimicked the action of cutting. Tentatively, he swung at the tangle. The stone turned in his hand and glanced away, leaving the branch unmarked. He tried again, harder, with the same result, and she laughed and took the hand-ax, holding it by one edge, and showed him how to slice across the branch, then handed it back.

It took a few tries to get the feel of the thing, then he was slicing with increasing skill at the tough wood. The sharpness of the edge was startling—the branches parted with clean, open cuts, and he soon discovered the knack of making two cuts meet in a vee. He was happily practicing his new art when the female placed a hand on his arm, indicating that they had cleared enough. Reluctantly, he handed back the ax.

Looking from his face to the ax,

she giggled, then motioned for him to follow. Leading him back through the brush to an outcropping of rock, she stooped, moving her hand over the stones. Selecting one at last, she handed it to Cain. He turned it as he had the hand-ax. There were a few chipped places—but nothing to match the edge of the ax. Puzzled, he returned the fist-sized rock. Her next act added to his puzzlement—picking up a second stone, she squatted, hammering the two together. The action seemed purposeless, but when she again offered the rock, there was a row of sharp chips down one side—sharper than the edge of the hand-ax had been.

To the credit of his man-bound wit, he grasped the idea almost immediately. The ground was littered with similar chunks, and he knelt and chose one, bringing it down on another without perceptible result. He swung again, harder. This time, both stones broke and crumbled, producing only a few flakes of decomposed granite. Giggling again, the girl knelt beside him, moving her hand over the rocks as she had done at first.

It took much gesturing to make Cain apprehend that rough, pitted rocks were unsuitable, and teach him to choose hard, brittle flints from the similarly iron-stained granites. When they had found several, he tried again. The stone fractured into two unequal halves on the first swing, without produc-

ing a sharp edge. The girl shook her head negatively, and took one of the chunks. This time, he watched closely as she hammered delicately at the sharp lip, flaking off smaller chips. At the end of the demonstration, he shrugged and rose. The process took two good hands.

He hunted again toward dusk—alone, more for the solitude of it than for food. He found a lizard, and, by luck, another hyrax, and the skies were already deepening into the purples of twilight before he returned to the sleeping-bush. He had lived there alone since the morning of the first hunt. Now there was movement within. He dropped the game and grasped his club, the sun-warmed bone reassuring to his hand, and slipped silently to the entrance, ready to fight. Instead, he found the girl, a few fruits laid beside her, in a second nest adjoining his own.

She was young—younger than he had thought—not yet heavy with child, or worn from childbirth. He expected some show of resentment from the two males, but there was none. For Cain's kind, pairing was a matter of life—and death. Only the strongest and most jealous kept more than one mate. The easy-going polygamy of the giants baffled him. He put it aside; the woman was his—that was enough.

IN THE next two weeks they greatly diminished the easier game in

the neighborhood of the water hole. The time was one of healing—at its end, his left arm was strong enough to grasp and carry, and he had learned three things; to throw the stones, to chip the edge of a flint to razor keenness, and to communicate—after a fashion—with Abel.

Abel, in turn, had come to enjoy unprecedented plenty. Cain required flesh to survive—Abel regarded it as a palatable luxury. He continued to eat his usual diet of tubers and grew almost sleek—and definitely lazy. Now the easy meat was nearly gone the time had come to hunt larger stuff.

It took two days of prodding—complicated by the lack of a common language or background—before the easy-going giants grasped what he was about—at first with reluctance, then with childlike enthusiasm.

The game was large—an eland, with four-foot horns that could slash or impale—but the technique was one that had been tested well; over a million years of experiment had gone into its devising.

Normally, there would have been twenty harriers—the young males of the pack—while the rest, females, older males, and children, waited in the ambush. And the prey would have been a herd, not a single animal. There were not enough of the giants for that. He must harry alone.

The stalk was tediously simple.

The antelope had little enough reason to fear the near-men. When one of them rose a few yards distant and began to shout, it merely nodded its massive head in annoyance and moved away. Exasperated, Cain came closer. Again, the mountain of meat moved daintily off. In his anger, he threw the hand-stone. By luck the sharp edge bit into the shining flank of the eland, and its head jerked up, eyes wide.

Grasping at success, Cain bent and scooped up a stone. The un-edged rock hit with enough force to bruise, and as Cain screamed in imitation of a leopard, the defiance in the beast's eyes changed to fear, and it bolted directly away from him. He followed, stopping only to retrieve the hand-stone, loping easily after the eland. It could outrun him, but he did not wish to catch it. At bay it would be too dangerous to face. It was running in the right direction, he would make sure that it kept running until he was too late.

The eland ignored the bush to either side, leaping with flat bounds any that stood in its path. A movement at one side nearly betrayed the trap, then the terrified beast was within the half-ring of waiters. Suddenly instead of one man-thing running after at a distance, it was being mobbed by them. Stones whizzed from all sides, thudding from lathered flanks or skittering noisily off, and

it broke stride and swung about, seeking only escape.

The circle closed inward about it, the din increasing. There was still a gap, and the antelope ran blindly—straight over the edge of the narrow ravine concealed in a fold of the gently rolling ground. There was the rotten-stick snap of breaking bone and the eland went down, both forelegs shattered. The giants gathered on the bank, watching it thrash, until Cain arrived, moving with the easy grace of the hunter.

He paused beside Abel, studying the situation, then slid down into the draw, the bone club in his right hand. The eyes of the crippled eland were alive with pain and fear, and the horns swung toward him, threatening disembowelment if he should come within reach. Circling warily out of range until the animal's head turned, Cain darted suddenly, club swinging to crack on the antelope's skull. Too light to crush or shatter, it rebounded. He danced away as the horns slashed at him, then moved in again, bone meeting bone.

To kill, he must strike at the neck with enough force to crack the vertebrae. There should have been a circle, keeping the beast under constant attack. For one hunter, it was a ticklish job. The second male—perhaps thinking Cain too feeble to strike a killing blow—ended the impasse—tragically.

What passed in the giant's mind was unclear. Without even rudi-

mentary caution he flung himself down the bank, hand-stone raised for the coup. His logic was nearly correct—the skull which had turned the club shattered beneath the stone—and the stabbing scimitar of horn, driven by the death reflex, drilled his shoulder. Only Cain's desperate, last moment shove kept it from piercing the lung, and killing. The wound was painful and disabling, but not crippling.

There was no question of moving the eland to the water hole intact, nor of staying in the open where predators could find them. The carcass was butchered where it lay, the women hacking it into bloody quarters with their stones, wasting nothing. Even the huge head was carried back in triumph. For the near-men, starvation was a constant companion. There was never enough to eat, and what the day brought was eaten without thought of the future—tomorrow must bring its own food or one starved. It was that simple.

Now there was food in abundance—the logical result of applying techniques designed to meet the minimum needs of a hundred-member hunting pack to a twelve-member foraging society. Faced with more food than they could possibly eat at a single sitting, they glutted themselves trying.

That any was saved was due to accident. They had carried the meat for miles, leaving a broad trail of blood to lure other predators.

The hyenas came at twilight, skulking through the bush, reluctant to attack the man-pack. A lion was next, ending the feast as the colony scattered to shelter, dragging the meat with them for one last try at gorging it all down.

Later, in the fitful, uncomfortable sleep of his first experience with indigestion, Cain dreamed—strange, disquieting dreams of pounding futilely at a lion with the bone club, of the stone in the giant's hand crashing through the eland's skull, of elands that transformed into leopards to hunt him. He awoke unrested, but with the nagging germ of an idea.

The girl awoke to find him sitting, the club in his right hand, the hand-ax in his left, staring from one to the other. With pragmatic insight, she left him to his puzzlement, crawling out to seek water. The entire colony was gripped in a massive hangover from the feast—yet there was still enough food to afford them the undreamt luxury of a day of rest.

He continued to nag at the puzzle through the morning. Its terms were clear enough: the club extended the reach, but lacked the mass to kill effectively—the hand-stone had the weight to kill even large game, but required a foolhardy closeness. The stones could be thrown, but had no advantage over an unedged rock unless the cutting edge chanced to strike true. Cain could feel the solution near at

hand, but it eluded him, and he gave up at last and went to the water to drink.

Abel and the rest lay sprawled about, lazing in the sun. After failing in a half-hearted attempt to interest the larger man in a short hunt, Cain joined him beneath the bush, tinkering with the two weapons again. Abel watched as he tapped the ground, first with the club, then with the ax, but lost interest after a few moments, as the girl had.

The effort was extraordinary. He had spent hours upon the problem, rather than minutes. The final solution took the perseverance of genius, and was elegantly simple—if the bone was not heavy enough, nor sharp enough, place the stone at the end of the bone, gaining weight and edge, keeping the advantage of reach.

He experimented for two days before he managed to wedge the hand-ax into the end of the femur of the eland. By then the food was gone, and they had been forced to hunt again. He had taken his new weapon, but bone, he quickly discovered, was brittle. When they had trapped the aardvark at last, its skull had shattered quite satisfactorily. So had the shaft of the new ax. Disgusted, he almost gave up.

It was the second male's wounded shoulder that ended the impasse. The sight of the raw flesh recalled his own torn arm, and he touched

the white scar. The leap was prodigious—for any near-man to recall a single incident after nearly two months was an incredible feat of mind. To equate a forked branch that had held his arm so tightly that he could not move it with the problem at hand was genius of the first order.

It was not lovely. Of necessity, the thorn branch was chosen for the proper fork, rather than for the proper shaft—but it worked. The edged stone now ended a three-foot club, tightly wedged by the spring of two curved twigs that passed around and beyond it. Others had used what nature provided, improving at times, but keeping to the natural form. This was something entirely new—an artifact, an object without natural analogue. There would be improvements over three million years, but no one would better the basic idea until the last, brief tick of recorded history.

In his monomania, he bullied the giants into another hunt for eland. The kill was swift, even though the animal had suffered only a broken leg, and could still hobble and slash. He had continued to experiment, slashing one haunch into bloody ribbons, until Abel finally objected—mildly at first, then heatedly. If the inventor wished to play with sticks and stones, that was his business—this was a pragmatic matter of wasting good food. Smarting and angry, Cain returned to the water hole.

It ended, as it had begun, with the girl. She was not in the shelter when he returned, and he left the ax, took his bone club, and went to seek her. Perhaps, had he not been angry, he would have understood. She had come to him freely. Should she tire of him, she could leave as freely—it was the way of the giants.

It was not Cain's way. The hunters mated, if at all, for life—a matter of survival, for a nursing female could not hunt. But status depended upon possession, and fights over females were commonplace. To have, and hold a woman, one must be strong—ready to challenge any who would take her. The stealing of a woman meant battle—or shame. When Cain found the girl with the second male, there was but one interpretation.

The bewildered giant nearly died at the first onslaught. The primitive hunting instinct aroused, Cain moved in for the kill, swinging the bone with wicked force and skill. Had one of the hunting folk received the blow, it would have shattered his skull—the giant, protected by the heavy ridge of jaw muscles, was only stunned. The resistance as the club struck triggered Cain's memory, and he turned, sprinting for his shelter to retrieve the ax—and kill.

It triggered something else. There was no precedent to guide him—none of his kind had yet met another culture, and survived. Yet the shock of experience had taught

him to think—the touch of the ax reinforced his new habits, bringing him to a stop. These were not his kind, and a sudden wave of alienation and homesickness swept over him. He had overstayed his time.

HE WAS well enough to travel. The coming of the girl, without a bitter fight to claim her, had been strange. He would accept her leaving as another strange, natural phenomenon among the giants. The first glimmering of understanding was not easy—it warred with ingrained patterns—but to his credit, instead of returning to the fight, he left the camp, heading toward the foothills—and home.

There was no need for preparation or delay—the ax was the sum of his possessions. To carry food would only make him tempting to predators—he would live on what he found along the way. He had covered three miles by dusk, alert for the big cats, when he heard something moving behind him.

It was Cain the hunter, instincts alert, who slipped to the shelter of a boulder to watch the trail. Whatever was trailing him made too much noise for a cat, and his eyes narrowed as he caught a glimpse of a massive, upright form against the darkling purples of the sky. Bitterness filled him. He had thought it different among the giants. He was evidently wrong.

The end came swiftly. His killing

instincts flooding back, Cain left his ambush, moving silently—stalking the other with incomparable skill. The giant did not hear Cain come behind him, nor did he sense the fall of the ax. The edged stone struck his neck, severing jugular and carotid arteries, only the thick muscles preventing total decapitation. Too late, Cain recognized Abel.

The larger man stared up at him with amazement and disbelief, then his eyes clouded with a pain that passed into the glaze of death. The hand-stone had fallen from one fist, but the other remained clenched, and Cain gently prised it open. Perhaps Abel had meant to give a parting gift, perhaps he had wanted to tempt Cain back. In the hand, like a silent reproach, lay three of the small, not quite ripe fruits the giants prized so dearly.

Cain had slain without thought, without mercy, without compunction. He had done so before. He would do so again. Yet, dimly comprehending that the giant had felt no malice, he knew this slaying to be different. He lacked the words or concepts to name guilt or remorse—but he had slain his friend, his brother. Murder had been born.

AMOMENT further he stood, the inexpressible sorrow pressing in at him, then turned away, to resume the long, dangerous trek to the hills—and manhood. ★

TARGET OF OPPORTUNITY

*As Dr. Asimov said in the July issue,
"if only we can survive this next crisis . . ."*

THOMAS WYLDE



CAPT. B. A. Cooper was flying CAVFR one mile above the Arabian sands of the Rub' al Khali, headed north to an IP over Abu Dhabi. In tally ho, fifteen meters of either wingtip, flew fighter support for his photo-recon mission. It was five minutes past noon, Solar Time—or 0735 Zulu—in bright sun and light haze. Fine weather for blowing out some precious jet fuel and grabbing a few snapshots of the fighting zone and the Japanese megatankers feeding at offshore deepwater oil terminals.

The war, if you could call it that, was three days old. But preparations in Washington had been ongoing two months. Readiness had become imperative when an environmental-resources satellite, had begun making guesses that a large oil field might be overlapping defunct U.S. and active Japanese oil concessions bordering Abu Dhabi. Confirmation of lower cretaceous oil had come quickly, if quietly. And shortly afterward certain vocal locals had expressed dissatisfaction with their government and its policy of all-Japanese oil export. Gaining momentum, the separatists had laid claim to a fifty-kilometer square of desert roughly encompassing the newly discovered field.

In a transport of selfless zeal, the U.S. had thereupon presented the secessionists with limited air-sup-

port. In the air that support soon encountered some dust and smoke and a few polite Japanese fighter-planes. Not much was happening on the ground.

Cooper's radarmap told him time to IP: nearly eight minutes. He could see the circular blips representing his double escort, watched one slowly move out in front while the other dropped back to cover his ass. The computer facsimile screen, correlating data from the phased array radar, started to show targets out front—tiny white triangles with quadrant identifying codes: RF1, RF2, and so on. The horizon line split the screen. In the present mode, only closing targets were displayed. Cooper took a few deep breaths and tried to relax.

Time to IP: five minutes.

He busied himself with his cameras, watching the status lights come up: *preheat, lock release, cam doors open, exposure to auto.* Two variable-position wing gun cameras relayed stereo video via the secure satellite datalink to base in Darwin, Australia. Beneath the fuselage there was a color 16mm movie camera set at 96 fps. Two still 35mm cameras shooting at alternate quarter seconds, one with tri-x b/w, the other with b/w infrared also hung ready—plus a 70mm panoramic still camera shooting color infrared at variable speed. All film was inflight-processed.

IP in three.

His flightseat began to vibrate according to the whims of the Attention Augmentor. The AA was supposed to keep a pilot alert as the situation around his plane became more demanding. Some airmen found it annoying. Most found it restful. Cooper generally ignored, when possible, its intrusion on his concentration.

He counted six targets up there, ranging from white to a deep blush. The redder they got, the closer they were. He could designate any four of them and get a radar or laser lock-up for his camera-control. As they came into range of one or another armament, the target triangles would flash as would the code designation of the optimum weapon. The computer made the selection; the pilot made the kill.

Not Cooper, of course. His recon plane flew unarmed. The only thing he could do was run—but he could do that impressively. Just over Mach three where the air thinned out; two point two plus on the deck.

IP in one.

He switched momentarily to visual. The nose camera gave him a fisheye view. Even at one mile up, his speed of nearly half a mile a second caused the sandstone ground features to blur. He made out nothing of consequence directly ahead though the IP was surely in sight.

He switched back to compfac and heard the reduce-speed beeper. On the third beep he was throttled

back to Mach 1.2 automatically, still matched by his cover. The lead plane was now two klics out front, a weak, pointless flak-suppressor.

IP—now.

The cameras turned over for five seconds then shut down. The flak-suppressor dropped back a thousand meters, his job complete. There had been no flak to soak up and no gun positions to smoke. The radarmap now read IP2: two minutes plus. Cooper held his speed steady, took a cautious breath, just to break the monotony.

By this time the screen in front of him showed eight targets, four of them blinking. Nobody was shooting, however. That was to be expected.

He zeroed in on one hostile with the gun cameras and got a laser lock-up. The target made a flyby at ten klics high, exposing its armed belly.

The Japanese fighters, code name Zato-Ichi, nosed around and sometimes buzzed recon missions. All quite friendly—so far. But no one knew how long the honeymoon would last. The groom was getting restless. If the secession stuck, the U.S. stood to gain exclusive rights to the new field when it came on-stream. Otherwise the field would be exploited by the Japanese as was the Murban-Bu Hasa field less than sixty kilometers to the west. And if they stood for this, they might stand for some more. It was impossible to say for sure, yet nobody

doubted the importance of Persian Gulf oil to a nation that required four or five billion barrels of crude every year.

At IP2 the Persian Gulf coast was hastily photographed, but Cooper didn't have time to inspect the results. The cameras ran another five and one-half seconds before the *recall* order came through. They were approaching the Fateh offshore field.

Wait . . .

Something was happening out there. The lead cover plane was peeling left, dropping fast. Cooper went to visual, found the stubby black delta-wing a thousand meters out and down, gaining speed, its water-charged after-burners lit.

"What the hell," he said.

He impulsively gripped the stick and dived after the leader. Below he saw the flat blue water and the long gray pencil-shape of a megatanker tied up at deepwater berth. In the sea just beyond her forecastle lay a storage tank, its dome some hundred meters across, containing perhaps 600k barrels down to the underwater rimline.

The lead plane swung wide around and dived on the tanker, apparently intent on blasting her. Two long dark pods separated from the wings. Empty drop tanks. The pilot obviously wanted more speed.

Who the hell was that? Willis? Baker? Of course, Baker! What the hell—

"Baker. Baker?" he yelled on the

intercom. "Break off, break off!"

"Shut up, Cooper."

"God damn it, Baker, you're out of your mind."

He glanced at the screen; the lead plane had armed several HE air-to-surface missiles.

Jesus, Baker!

Capt. Cooper throttled up, stroked the burners and cut across the chord of his curving pursuit, simultaneously pickling his own empty wing tanks. He passed Mach two—point one, point two, point four, his G-reaction suit squeezing him in craft-stress warning.

A buzzer sounded and the comp-fac screen indicated a target closing fast on Cooper's own tail—bright red, blinking furiously. Where the hell was Willis?

Decelerating to Mach two-oh in one and a half seconds, he caught up a mile from the tanker and planted himself below and in front of the cover plane.

"Damn you," Baker said as they flew formation a hundred meters over the tanker.

The Zato-Ichi pulled out at the last second, climbing left and decelerating.

Cooper accelerated right, climbed and gained a post above and behind Baker.

Best I could do, thought Baker. Still, the shock waves alone would have caused enough damage to provoke a strong Japanese protest to DeeCee. What the hell was going on?

IT WAS evening in Darwin as they helped Cooper out of his G-suit. He walked moodily to the med-center and sat on a plastic bench to wait his turn at debriefing. Somebody grabbed his shoulder and spun him around.

"Cooper, you idiot," Baker said.

"Me?"

"Let me tell you something, Cooper." Baker was savagely ripping the velcro seams of his G-suit. "You just stay the hell away from me. Understand?"

"Baker, you got bubbles in your brain. You tried to smoke that tanker!"

"Tried, my left nut. I'd have *done* it if you hadn't busted in. Let me give you a piece of advice, Cooper. Don't pull a stunt like that on me again. Ever!"

A medical officer walked up to them. "Next."

Colonel Baker said, "Debrief this insubordinate bastard. I'll be back in half an hour when I cool off. Going to the Club."

When they were alone the doc said, "He's blowing smoke on your little tushy again. You must be doing something right."

Cooper just shook his head.

"That guy may be an idiot," the doc went on, "but he's got a piece of paper that says he owns your ass. You'd better lighten up."

"Me? I don't believe this! If he goes on like he's been going, we'll

be up to our ears in a shooting-war with the Japs—and nothing that's happened in the last ten years justifies that."

"True."

"Makes you wonder."

"What?"

"That guy's a colonel with fifteen years in grade. They know he's a good pilot but they don't trust him."

"Yeah, but he's the boss, Cooper."

"That's what scares me."

"Racist."

"Screw you."

ONE hour later in the officer's mess.

"Cooper? The CO wants to see you."

"Can't you see I'm eating my supper?"

The sergeant merely stood silent by the table. Cooper had a tendency to eat alone. He liked to think it was not his choice but he was beginning to wonder.

"All right. Be with you in a minute."

The sergeant turned his head an inch toward the door, his eyes still on Cooper's.

The captain threw down his fork and made a lot of noise getting to his feet.

"My pleasure."

The sergeant followed closely in the corridor, clicking the linoleum. He escorted Cooper to the door,

opened it, closed him inside.

In fresh fatigues, Baker was sitting behind his desk reading a paperback mystery novel. He looked once at Cooper, then went on reading for five minutes while Cooper watched. Baker had kept himself fit into his middle fifties. A career flier who had passed his forty-fourth birthday in the air over Nam during the celebrated Christmas bombings prior to the ceasefire. He was proud of that. They called him Super Jinker because of the way he twisted, climbed and sweived his Phantom 4C coming out of a bomb run. A bona fide terror of the airways.

He finished a chapter, said, "Ha. I knew it." He flung the book down split on the desktop.

"Cooper, Cooper, *Captain* Cooper, what do you think? You think I'm the big black bogieman out to gobble up your tender white butt?"

"No, sir. You're not so big."

"Ha?"

"You're—"

"Shut up, Cooper. I'm going to set you straight right now. And get this, Cooper. If you're not straight, absolutely straight, after our little talk, if you still harbor any niggling doubts about anything—then from now on your life is going to be awfully complicated."

"Yes, sir."

"Shut up, Cooper. Hear this. The world runs on oil, right? You can forget your silly pipe-dreams of

unlimited nuclear power, at least for the next ten or twenty years. Things just haven't worked out in that area. So we gotta get that oil. This year the good citizens of North America would surely like to get their mitts on a billion and a half tons of the stuff—tons, I said. But the funny thing is, those fine people have dug and sniffed around the continent and have come up with only about eight hundred million tons, shale oil and all . . ."

"Colonel, sooner or later the North Slope oil will—"

"Later, not sooner. The first fifty million tons of that Alaskan crude got itself contaminated. The oil companies won't touch it, say it's too hot to refine at present. Meanwhile our good buddy Japan has been getting a steady flow from the Middle East. LNG, too. They were also getting some stuff from our other good buddy, Russia. They went and built the trans-Siberian pipeline so they could load up offshore at Nochodka. But some time ago the Soviets said they're plenty sorry, they've got mechanical difficulty on that pipeline. The Russian oil just dried up. And remember that deal with Canada to dig into the Athabasca tar sands? Fell through, for reasons which should be obvious. Point is, Cooper, they just can't afford to lose this thing near Abu Dhabi. They got a fleet of megatankers doing nothing but making the run to and from the Gulf. Each ship hauls nearly a mil-

lion tons of crude, making nine or ten round trips a year. Yet right now Japan has only a sixteen-day reserve at home. Sixteen days! They're tearing their hair out by the roots."

"Sir, I don't see what bearing that has on—"

"Shut up." Baker rose and strode to a wall-map, pointed at the Malay Peninsula. "More than ten years ago they went and blocked the Strait of Malacca and the Singapore Strait for themselves by building supertankers. Now they got the *megatankers*. Half a klic long and, fully loaded, more than sixty-five feet of draft. The Straits aren't deep enough to be navigated by ships that low in the water. Well, neither were most of the ports. Some the Japan boys dug out. In general though, except in crowded shipbuilding harbors like I.H.I. at Yokohama, they did what everybody else was doing—put down off-shore deepwater single-point moorings. And to kick this Malacca Strait problem, they merely set up a pair of berths on opposite sides of the Isthmus of Kra, here at the narrowest point of the peninsula. They built ten million-barrel storage tanks at either end and rescheduled their tanker routes. These days about a third of their megatankers make the run between the Gulf and the tanks, the rest running north to the Islands. Their only hang-up is that fifty-inch pipeline between the mountains of the Isthmus. It's even

more vulnerable than the Straits."

"I heard they mean to dig a canal."

"Can't set up permission from either Thai government. So that pipeline will be the big show for at least another ten years. And if it ever springs a leak, they simply haven't got enough shallow-draft tankers to pick up the slack by negotiating the Straits. They'd have to run their megatankers at half load, and that would eat them up in fuel consumption. It costs them seventy-five hundred tons of low-sulphur diesel oil every round trip."

Baker sat back down. Cooper remained standing in front of the desk.

"Cooper, none of this is news to you. I'm sure some sleepy lieutenant dumped this load on you weeks, maybe months ago. The point you seem to be missing is what the situation has to do with our actions in the field. The Japs are pressed so hard against the well-known wall they can feel the other side. Which isn't surprising, considering it's us on the other side—leaning against them. This planet isn't rich enough to support us both with all our industry, or even most of it. We're both of us in the same goddamn hole and now we're getting ready for a fight over the ladder. And two things are important. One, that they should start it—and two, that we should win it."

"All this should be clear to you; if they haven't got the guts they

showed at Pearl Harbor we'll just have to prod them a bit. So today I made my little pass at a megatanker in the Gulf. The Zato-Ichi on my tail might have been spooked enough to take a shot at me, but your interference was so obviously a saving gesture that he knew he could just sit up there and watch you make a fool out of both of us. This will not happen again."

"And what if we do it—what if we win it and the oil lifeline just stops? What will the Japanese do then?"

"Take a short cut to the Stone Age I suppose—what the hell do I care? Go back to your soyasteak, Cooper."

"Sir."

"Tell you something, Cooper. We don't get this oil, we might as well hang it up. In the spring of forty-five I was humping it in the South Pacific, fighting Japs. I was seventeen goddamn years old, Cooper, busting my black ass to beat those yellow bastards. And we did beat'em, beat'em bad. So thirty years later they were tearing the guts out of our economy—and two years ago they went number two in the world! All the while they've been getting their oil steady from the Arabs while we've been getting hind teat and a boot in the butt. God damn it, Cooper, we owe it to'em."

"Sir."

"Go back to your soyasteak, Cooper."

Cooper wandered down the halls. Okay, now he was straight.

III

THEY roused him at four, flashlight in his eyes, rough hands on his back.

"Cooper? Outta the sack. Go get a preflight, get suited, and get to the duty room at five. That's five! You got a mission."

"I flew yesterday!"

"Hit it."

Ten minutes later Cooper pushed open the door of the medcenter. It was virtually deserted.

"What the hell," he said. "We flew yesterday."

"No shit," Willis said. "We must be good."

"I wonder," Cooper responded gloomily.

The sergeant who came in next looked as if he had been up all night. Probably he had. He began to give Willis the preflight physical.

"Wait a minute," Cooper said. "Where's the doc?"

"In dreamland."

"Why isn't he here?"

"He was on call last night, so he's off today."

"Everybody's off today but us."

"Me, too," the sergeant said. "I'm off today, too."

"What the hell kind of war we running here?" That from Willis.

"Unscheduled."

"Don't you believe it," Cooper said.

The two pilots sat in the duty room from five until five-thirty, then Baker came in. Suited up, he gave out with his special preflight everything's-in-the-bag-baby grin.

"Don't eat breakfast," he said.

They groaned. Who could eat?

Baker winked. "Got here a special flight for my special aces. Let me give you some background."

He paused to light up a preflight cigar and to pull down a map of Southeast Asia. Japanese shipping routes were lined in red, the cross-peninsula pipeline in black. He grabbed a pointer and indicated a spot in the Indian Ocean.

"Right there, as of half an hour ago, is a Jap carrier. She's mothering at least forty Zato-Ichis, five to seven of which are constantly airborne. Mainly they cover the Gulf and the pipeline. Yesterday we frolicked at the Zone of Conflict and over the Gulf. This morning we're going to do a number on the pipeline. Yes, Cooper, we're really going to do it."

"Why?"

"Shut up, Cooper. Any more questions? No? Good. Listen up. We strongly suspect the Japs have nuclear weapons stored on that carrier and deploy them on those planes. Pictures you made yesterday showed something new slung under the wings."

"Where'd they get them?" Willis asked.

"Good question. Probably from France. But they might even be

homemade—their professed aversion to atomics never made any sense to me. Their right-wing has been pushing quietly for nuke capability since the late sixties. They claimed a tactical-nuke arsenal necessary for the Self-Defense Forces—and I have to agree with them there. In the early seventies Japan was on N-2 status, which meant they could develop the hardware within two years of go. Five years later they were at N-1, and two years ago we clocked them at N-O.5. Well, they've had the time and they sure as hell have had the incentive!—"

"That doesn't mean they're going to use them."

"Good point, Cooper. You're right—there's a disturbing possibility they might manage to restrain themselves. This mission is designed to eliminate that possibility."

"How?"

"Simple. The Japanese can't afford a break in that pipeline. Under any circumstances. So it's reasonable to assume they'll defend it to the bitter end. If Willis were to buzz it, they would certainly be looking to blast him out of there. Fact is, though, they could do it with conventional high explosives, and for our purposes that's not good enough. We need a Tonkin that can't be doubted. The hope is that with an unarmed recon plane along they'll think we're just on another snapshot session, so they'll hesitate. When they do see it's a

bomb run going down they'll be committed to a large kill radius—larger than HE can produce—large enough to make nuke imperative.”

“Cute,” Cooper conceded.

“So that’s it,” Baker said, rolling the cigar in his mouth. “Willis goes up in one big-ass fireball and you, Cooper, catch all this Oriental villainy on film.”

“Yeah. cute,” said Willis.

Baker strolled out, and on down the corridor to Operations to check the weather.

Cooper looked at Willis. “You think he’s serious? Think he’d really set you up like that?”

Willis smiled. “Don’t know. That damned plane of mine cost ten million, stripped.”

IV

MORE delays. Fueling problems. And the question hardened in Cooper’s mind: is this mission authorized?

Baker finally came back, looking sour.

“Okay, we’re set.”

No more questions.

By 0300Z they were two miles over Singapore. It was midmorning local. Trees mounted the slopes of the peninsular range. The formation swung right, heading closer to due north to avoid the higher peaks and possible turbulence. They would approach the pipeline from the southeast, from the Gulf of Siam.

Cooper returned to compfac mode and watched for targets. He was brooding about Baker’s orders. How much of this mission was official—and how much was the result of an old soldier’s tortuous reading of his government’s secret wishes? It was clear he meant to risk valuable government property. Risk, hell. He meant to destroy a plane. And where would that leave Willis?

IP in twelve minutes—*mark*.

The rear target alarm buzzed. Cooper checked it out. The bogie was out of range, closing for a minute or so then breaking off. Ahead the sky stretched clear.

Soon, though, Zato-Ichis would collect around them. Most likely that rear target would request confirmation of what was guessed about the mission; the resulting scramble might bring out a pretty fair number of defenders. Wait and see.

IP in eight.

Baker came on the line. “Cooper, I’m going to follow you all the way in this time. In a minute or two Willis is going up front. Keep him in your cameras at all times—close-up on the video, wide angle with the movie camera. When we reach IP, I’ll direct your flight according to ambience. If more than a single Zato tails Willis, you might have to draw one off. The more conventional firepower they have available, the less likely they are to go nuke. Check?”

"Check," Willis said.

"Check?"

"Yeah," Cooper muttered.

Glancing at his camera-status lights, he obtained a radar lock-up on Willis and tied the 16mm to the fire-control system. Because he figured to do the video on manual, he activated a monitor beside the radar map. After a few seconds he changed his mind and tied the video cameras into the IFC net.

IP in five.

Then, happening to look, Cooper was startled by six steady pink triangles clustered left on the screen. When he concentrated he could hear the faint target-up warning hum. His Attention Augmentor seemed out of action. He hoped Baker was paying enough attention—then he realized how silly it was to give a thought to Baker's combat acuity. Ironically, he felt safe with Baker behind him. Nothing could happen to Cooper, only to Willis. For a moment he felt light-headed. What a joke.

He recalled Rule Number One. *Anyone who isn't completely terrified doesn't fully understand the situation.*

The triangles began to blink, growing redder steadily. The compfac screen bathed them all in a pink aura, printing out in white letters the optimum weapon for use against any one of them. He saw that Baker had the proper system armed: a video air-to-air missile. Then Cooper noted the designated

warhead code: not HE, but XS—a small (0.5 kt) tactical nuke.

IP in three.

Two more triangles entered the screen directly ahead of them. As he watched they went from steady white to red and flashing, then veered right. The circle of the lead plane pulled slowly ahead and took up a position some two thousand meters in front of his plane.

"Follow him in," Baker ordered.

"I am!"

Cooper looked at the compfac. They were back over the forest now. He saw the black delta-wing of Willis's plane centered in the video monitor cross-hairs, the light from his twin exhausts fuzzing the picture.

IP in one.

"Close up! Close up!"

He nudged the throttle and shortened the gap to one klic. The rear target buzzer was eating itself up. Three flashing red triangles raced two klics behind Baker.

IP . . . now!

"Cameras? Cameras?"

"Negative. We break. Drop your tanks. Everybody go two-oh on three. One-two-three."

They maneuvered.

In a moment they were over the Gulf again, flying due east at Mach two.

"What happened?" Cooper asked.

"Weren't enough takers on that one," Baker said. "We'll have to go around again."

"Jesus Christ."

"Shut up, Cooper."

They flew halfway to Pointe de Camau then did three-sixty. The computer compared inertial guidance with the Doppler radar, and both against a navaid pulse from the local 13.1 kHz Omega xmtr, then set up a new course back to IP.

"We better make it good this time," Baker said. "We're running out of juice. I don't want to have to buy fuel on the way back."

Yeah, thought Cooper. Might be embarrassing to order up a tanker to wet-nurse some birds that weren't supposed to be flying.

"This time Cooper hangs back. Let the lead plane look good and mean and maybe they'll get the idea. We'll come in on the length of the pipeline this time, from the northeast. Willis, you get in close and let loose an HE Sleuth. But keep an eye out. I want you to have time to send your shot wild before they make the kill. I don't think it would be a good idea to harm that pipeline during our friendly recon mission. Check?"

They checked.

IP in three.

All right targets were back on the screen, now evenly dispersed over the horizon in front of them. Looked as if the Japanese were aroused this time.

Cooper checked the board again. Willis was still in the cross-hairs, all cameras greentime.

IP was the east end of the pipe-

line. Tough visually camouflaged, its heat-signature was unmistakable. When they reached it there were three red bogies on their tails, the closest barely a thousand meters behind Baker.

"Stay clear, Cooper."

They throttled back and gained altitude until the lead plane was obviously on its own. The three Zatos passed beneath them, following Willis down to the pipeline.

"Okay, Cooper, go in there and pull one of those guys out. I'll take the other one. Start north then cut back to the pipeline and be ready to snap the action."

They dived on the triangles.

When Baker made a feint at the pipeline, one of the defenders broke off and slid back to cover him. Both drifted to the south.

Cooper saw them go and tried to pull the same trick. He was now in the all-target mode, and one of the flashing red triangles, his target, seemed to hesitate. The R code was blinking as the Japanese plane stopped receding and verged on closing when Cooper slowed. It was curious about the plane's actions. It wanted to investigate but was not sure it should. Both defenders were five hundred meters behind Willis, obviously watching him closely. They considered corraling that lead American plane imperative but one of them, Cooper's target, began to slow noticeably.

"Come on, sucker—"

Just then Willis fired his mis-

sile—too early! Purposely he fish-tailed it to leave no doubt he was flying it himself via the secure tv datalink. That made it amply clear to one and all that downing Willis would be no mere act of after-the-fact revenge. That standoff missile snaking its way toward the precious pipeline was controlled from transmitters contained in his plane and nowhere else.

Both triangles settled down for the kill.

Cooper saw there was no point in trying to lure away any of those fighters now. It suddenly occurred to him that his obvious lack of armaments made him a rather pathetic judas goat. Nothing to do now but roll the cameras.

Willis was stuck fast in the crosshairs of the monitor, locked in by skin-track radar. Cooper was ready to take pictures as soon as the fighters—

There!

One of the Zatos had fired a missile, triggering the cameras. Willis abruptly pulled up and tried to evade but—

"Damn it!" Baker said.

The white circle of the lead plane vanished from the compfac screen.

"Damn it!"

Cooper went to nose camera and saw a cloud of debris floating down toward the brushland.

"Damn it!"

The radiation curve was flat.

"Cooper! Shut down your cameras."

No fireball.

He went back to compfac. The Slcuth that Willis had fired was curving peacefully toward the mountainside, locked on a hapless bush. There were no targets in front of Cooper though the rear-target warning was on. For some reason his AA had come back on the air and was now prodding him vigorously. He swore at it. The remaining white circle, Baker's, drifted in from the south, joined formation at Cooper's wingtip.

"Now what?" Cooper asked.

"Let me think."

"We blew it, right?"

"Shut up!"

They were back out over water, headed west across the Andaman Sea. The screen seemed to vibrate in Cooper's face. Damned AA!

"You're still armed," Cooper said.

"I know."

"Nuke warheads."

"So what?"

"You're supposed to go to SAFE as soon as all targets-of-opportunity are out of the system."

There was a long pause, then Baker said, "What would you know about it, you crummy recon?"

Cooper shut up for a second, wondering what would happen next. Baker was desperate. He needed a fireball this noon, and was just crazy enough to go to any length to get it.

As if on cue the white circle broke off to the south, climbing. If

he was right, Baker would try to get a clear shot at him, probably from behind.

"Damn you, Baker!"

No response.

Cooper's fingers tightened on the stick.

Okay.

He banked left and hit the burners. He'd have to climb onto Baker's tail and stay there. It was the only way to prevent him from firing.

Cooper was turning, climbing, accelerating so fast the wing-stress lights flashed and the max-G alarms went off deafeningly. The wing skin-temp passed 200 degrees C at 10 Gs. He was close to tearing the wings off the bird but that wasn't worrying him now. He was getting some unexpected results, though; his AA suddenly crapped out, apparently convinced he was paying the situation ample attention.

The nose camera showed his progress, the twin tailpipes of Baker's plane growing larger and brighter until proximity alarms sounded. Then Cooper cut back and matched speed ten meters from nose to tail.

Baker suddenly twisted down and right, and Cooper was practically alone in space.

Damn it, that bastard can fly. Super Jinker.

Cooper went back to compfac to find him, then got a radar lock-up, ganged in with the video cameras and shut down the wing camera-

mount servos. As the gun cameras snapped to the front zero position the plane lurched, trying to catch up. Now the computer would maneuver the whole aircraft to maintain both camera and radar lock-up at the same time. He would be able to follow Baker's moves automatically, no matter how hairy, accelerating however much necessary to hug the colonel's tail. Till fuel ran out.

Within half a minute Baker's plane was twenty-five meters out front, and Cooper got set to have his plane towed around the sky for a while.

After three stress-filled minutes, during which all the warning lights—engine temp, wing-skin temp, max-G, hydraulic pressure, turbine coolant, power supply ripple, low fuel, among others—came on and stayed on, Baker stopped his maneuvers and settled down. They were some five minutes west of the pipeline, having made several three-sixties in the progress. Cooper grabbed some air and wiped the sweat out of his eyes.

Then it happened, without surprise.

"Baker, you idiot."

No answer, just the XS Sleuth heading out straight and smooth, now curving slightly to the right, moving lazily.

Cooper could not say anything. He knew that missile would be coming up his tailpipes in a few minutes, after its leisurely circuit.

Baker was willing to take them both down to gain his bloody fireball.

Bastard leaves me no choice, he thought, ripping at his harnesses and plugs. Does he really think I'm going to sit still for this?

He punched DROP TRACK, releasing the plane from its duty to tail Baker. Then he pulled free from the gyro-flightchair, dropped his headset, and sent the plane off south toward the Indian Ocean.

He pulled open the door and ran out into the hall, skipped past armed MPs and paper-carrying clerks.

"Is the mission over?" someone barked.

"Not yet!"

He sprinted ten meters up the hall to Baker's room, found Willis out front smoking and joking with the guard.

"Out of the way!"

He had to hit the guard before he could get the door open. Baker was hunched up over the compfac screen, watching the insert video monitor as the Sleuth closed on the recon ship, Cooper's ship, a kic and a half away.

He came down on the FRIEND switch and Baker's jaw simultaneously, then he felt the hands on his shoulders wrenching him out of there. There was just enough time to chop the colonel behind the neck and end the mission for sure. The Sleuth was busy shredding itself with TNT, and now maybe someone could jump in and bring both

the drones home.

V

HE DROWSED alone in his cell. The new Leavenworth Annex was quiet. Only five weeks had gone by since the raid on the pipeline, when the two drones had been left cruising alone over the Indian Ocean. They told him Baker's plane had been retrieved electronically, rendezvoused with a tanker, then flown back to the American carrier south of Java. His plane, they said, had dived too low and couldn't be reached before sliding into the sea three nautical miles north of the Japanese carrier. It was probably true. The monitor computer considered the facts and made its historic judgment: pilot captured.

"It wouldn't be fair to the spirit of war," Baker had said, a brand-new cigar stuck in his mouth. "Granted one purpose of RPVs is to avoid the POW problem, to keep an enemy from gaining hostages—but the fact remains they have every right to expect a downed pilot not be allowed back into the game. You'll be looked after by neutrals back in the States. No sweat."

No sweat.

Right.

Besides, it was unpatriotic to complain; the war with Japan, you know.

Remember Pearl Harbor!
Wasn't she a singer?

Cooper droused. Best way to spend internment. Then suddenly, noise. He opened his eyes. They were bringing a visitor into his cell.

"Back from the dead?"

"That's right," Willis said.

The guard locked up and went off down the empty corridor.

"You my new roommate?"

Willis shook his head. "You don't need a roomie."

"I'm too self-sufficient?"

Willis smiled. "Cooper, you need all the discipline you can get, but you'll have to look elsewhere for it. You're free."

"Free? I don't understand."

"Two things. The war's over—"

"Over? Already?"

"And second, Baker made a mistake putting you under arrest. Your plane didn't go down. It seems he invented this POW thing to avoid an investigation of the events leading up to the, ah, misunderstanding with Japan."

"Mis—"

"Let me finish!" Willis told him how certain complaints about Baker had begun to reach the upper strata of Air Force authority, and how the Inspector General had been persuaded to look into the matter.

"You? From the I.G.?"

"Don't be ridiculous," Willis said. "I'm a pilot. I know I.G. personnel who sleep with their shoes on 'cause they can't get the knots out of their shoestrings. And they're going to pose as pilots? Anyway,

the I.G. office got hold of me, asked for help. Seems Baker was losing computer tapes of certain key missions. They needed substantial proof before they could act, so I gave 'em tapes of the pipeline mission."

The I.G. had finally acted, but slowly, with the solemnity befitting the busting of a Full Colonel. That slowness had given Baker time to ship Cooper to the States with some intriguing data appended to his records: *Cooper, Bertram Albert. Captured 3 Dec 85 during armed robbery of Willowbrook S & L, Pratt, Kansas. Convicted 15 Dec 85. Fourth offense. No parole. Life.*

Super Jinker.

"How could he hope to get away with it?"

Willis shrugged. "In a world where records speak louder than people . . ."

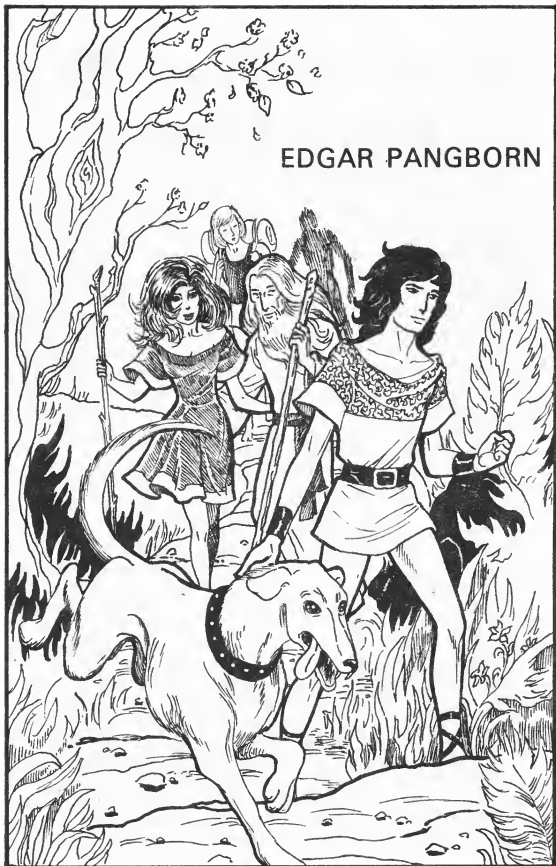
"Where is he now? In jail?"

"Are you kidding? He resigned his commission and his pension and started work for a company that makes some of the armament we haul around in the name of peace. He's a vice president, as a matter of fact."

Super Jinker.

And anyway the incipient War, the Incident, the Misunderstanding, was over. Oil flowed both east and west now, giving both nations a bit of breathing room as they struggled to invent the technology that would power the twenty-first century. ★

EDGAR PANGBORN



THE COMPANY OF GLORY

Part II of III

WHAT HAS GONE BEFORE

DEMETRIOS was born, under the name Adam Freeman, in 1980 at Hesterville, Missouri. 13 years before the 20-Minute War and the following plagues which destroyed his family, Adam fell in with a party who believed things were better in the east. They traveled through heat and torrential rains to a place called Nuber, in the Cat-skills. During the journey a boy Adam loved, Demetrios Makarios, destroyed himself, unable to endure the collapse of his world. The boy's mother refused to believe him dead and "mistook" Adam for him; he supported her delusion by taking the name Demetrios, and kept it ever after.

Forty-seven years later, still at Nuber, he has become a streetcorner yarn-spinner, earning the rest of his living as janitor in a respectable sex-house in the "Outer City". Inner City is reserved for the aristocracy, the new rulers who support an uneasy monarchy and call the city-state a "King's Republic". The water level has risen in a warming climate; wilderness has returned over most of North America where the sea has not.

After giving some of his long-ago experiences as a streetcorner tale, and making a few radical remarks, Demetrios is informed by a policeman that he must get a license for storytelling at Town Hall before he can do it again. The little crowd breaks up, but two members of it, ANGUS BRIDGEMAN, a young aristocrat, and GARTH, a stable-boy, will go with Demetrios to the ends of the earth, and Angus' wolf-hound Brand will be another companion. In a private conversation in the city park, Demetrios learns something of Angus' life in Inner City, which is precarious. He also recognizes the boy's quality and loves him. They agree to meet tomorrow in the same place.

Demetrios returns to the sex-house run by MAM ESTELLE on Redcurtain Street. He shares a room there with his two closest companions, THE PROFESSOR (a lute-player who never speaks) and SOLITAIRE, a girl Demetrios found wandering after her loss of memory. Mam Estelle and her helper BABETTE are also close friends of Demetrios, and he sometimes helps entertain in the Parlor with his stories. It is a pleasant life,

except that everything in Nuber is under the shadow of a medievalism, a returning dark age. Demetrios was the son of a doctor, and remembers an age when reason might have had a chance.

In the morning Demetrios goes to the Town Hall to see about a license, and learns it costs more than he can afford. There is an impending shakeup: the Nuber authorities are worried by a new sect, the Abramites—and all storytellers and other uncommon people are regarded as potential subversives. The Abramites are followers of the prophet Abraham, martyred at Nuber 17 years before—the ever-recurrent Christ figure who declares the earth must make way for the kingdom of heaven. In the past Demetrios has made a streetcorner story of the martyrdom—he saw it happen himself—and is suspected of being an Abramite.

Inserted here is an excerpt from a diary kept by Mam Estelle, (and others will appear later). She rambles considerably, concerned with her own past as well as the present. She also was born in Old Time, indeed is somewhat older than Demetrios. In the 20-Minute War she lost her lovers and her baby whom she adored; she drifted to Nuber, worked in the sex-house and later inherited the management of it.

(And occasionally you will encounter remarks by "the one who writes this book" and who doesn't

quite seem to be Pangborn—don't worry about it.)

After his disturbing interview with a police lieutenant who specifically warns him against ever telling the story of Abraham again, Demetrios goes to the park to meet Angus, who is not there. In his disappointment, and anger at the license thing, Demetrios gets a bit drunk, and defies fate by drawing a crowd and telling the story of Abraham, as it truly happened. The policemen appear as he is finishing, and he has a glimpse of Garth arriving, but not Angus.

VIII

The Happenest Day of My Life

Many heroes lived before Agamemnon, but all are submerged in the long night unwept, unknown, because they lacked a sacred poet.

—Horace, *ODES*, IV: 9.

THE TWO in dark uniforms approached casually—no disturbance wanted—a few yards behind Garth's innocent grin; the boy had not caught on. Demetrios let his walnut stick tumble at Garth's feet, and stooped for it as he did—he would of course, bless him! When their heads were close Demetrios mumbled: "Keep clear so you can help—lose yourself in the crowd, fast!" A moment of shock, and Garth understood; he became a blue-eyed fox peering through the

bush of a fat woman's frizzed-out hair ten feet away.

"Got a license?" They were officers Demetrios did not know; but they knew him. *What have I done? What can I prove except my own stupid anger? O Solitaire!*—

He should have thought of her before. "License?"

"Come on," said the beefy one. "You can explain it to Brome."

"Cossack!" shouted the woman with frizzy hair. "He didn't do nothing only talk about holy Abraham."

"Just keep back, folks. Mind your own business." She did, like the rest of the gazing crowd; the lean one secured Demetrios' arm, his hands heavy with uneasiness.

"Why, I'm coming quietly. Mind my stick there, it's a palindrome. Lose that or mishandle it and you'll be the sickest man alive."

"A what?"

"Palindrome. At least carry it upside down, man, so the power won't flow into your arse cross-ways."

"Maybe he—uh—better carry it, Cass? If it's one of them what he said?"

"Well, I guess not," said beefy Cass; but on the long walk down across the Meadows to the town lock-up, Cass held the stick at arm's length, and upside down so far as he could without quite knowing which end was the top.

"Aren't we going to the Town Hall?"

"Brome is busy, Mister," said Cass. Demetrios saw the pursed smile of a bully not quite sure of his powers. "Put up with our hospitality a while, Mister." The lean one's hands now held no more than a token grip. "Be our guest, Mister," said Cass.

The lock-up was a one-story lump of mortared stone at the end of an alley from which a path straggled up into the Meadows. Oak trees spread green sadness over lesser growth by the little jail, over its yard with one bench, one upright post. Rings on the post served for hitching horses, or people. No other building stood in sight. No sunshine, no breeze—yes, there was a breeze, a wish-hush of the upper leaves underlining silence. Daylight, but to Demetrios' mind came the taste of perpetual evening.

The one-eyed stubble-faced jailor, his bundle of keys too large for him, gazed up at Demetrios with the distrustful pleasure the man with the club might show before a haltered bull. "Cass, what've you brung me? This ain't no lazy idle beggar. What you done for your country, Mister? Been into the till? Raped some little twist? Kind of forgot your old self in public? Hey?"

"Put him in the tight one," said Cass, "and keep your thoughts inside your brains, Putney. No fraternizing. Brome says."

"I have news for you, Mister

Cass. We may appeal to live a retired life heah, but all my three apartments is full, Mister Cass, and what do you think of that?"

"Put him in with Bosco then, it'll make a pair of'em. But no fraternizing with this'n. Oh, and keep this some place." Cass set the stick respectfully in a corner of the room that served Putney as reception hall, office, kitchen, bedroom; a chamber-pot stood out from under the bed doubling as spittoon. The inner door gave on a corridor serving the three cells; Putney liked to keep it closed, enjoying his privacy and his own flavors.

Demetrios was relieved of his tinder-box and the few coins he had salvaged from his cap. Cass and the lean man departed as soon as Demetrios stood safe and harmless on the wrong side of Cell 2's metal door. Putney lingered. "I'll tend to your comfort. No talking, mind." He opened a door down the corridor on a storage shed.

"He says no talking," said the bear-like man cross-legged on a heap of straw. "It's kind of like his cough. I'm Bosco."

"Demetrios. How do?"

"Fair to shitty. Glad to know y'."

"No talking!" Putney bustled back with straw on a pitchfork.

"He has this problem," said Bosco. "How to unlock the fucking door without putting down the straw. Give it up, Putney?"

"Up yours too." Putney set down the load and worked the key.

"Stand back. This here's a self-service reform school, Mister Fancy—you make your own bed." He flung the straw to the free side of the cell, and leaned on the fork, dim and droopy in the watery light from one barred window high in the north wall. "That all the money you had?"

"Ayah. When do I get to see Lieutenant Brome?"

"Can't figure the way you people come snorting and piss-assing in here without no money. You a'n't that stupid, you'd ought to know it costs like any place else. Don't worry about Brome." Putney backed off fretfully, his key rattled in the wards, and he spoke from behind the gate's protection. "Cass or Jack'll get word to your people after-while, likely. We're good about that." He giggled. "We a'ways notify the next of skin." A fine, no doubt, and Mam Estelle would feel obliged to pay it. *Trouble walks with me*. "No talking now," said Putney, and he trotted off to his own burrow.

"**T**HE gentlemen either side of us are resting," said Bosco. "One beat up and could be dead for all I know; t'other's getting on for a hundred and not too lively—you might hear him sing, or ask for vitaminds, whatever they be. Care for a marawan candy? Can't light up nothing in there, account of the straw."

"Thanks, Bosco." Demetrios chewed the aromatic trifle; a light sedative would be welcome. "Been here a while?"

"Long enough to get three days older." Settled on the not uncomfortable straw, Demetrios considered his companion—smooth-flowing muscle, upper arms like a bear's hams. Bosco was hairy but neat, the brown shag of his head somewhat combed. He smelled sweaty but not rancid; probably liked to wash when he got the chance. "Misunderstanding and hard luck brung me low, Demetrios. See, there was this sucking pig come up to the fence when I happened to be leaning over, and I could see he was the one too many in the litter, having a hard time. So I picks him up, and I was going happy down the road planning a short life and a merry one for the dear little fella, when these two cops come out of the bushes, rot them. Same two bastards that brung you in, and don't it beat all Christ the way they hunt in pairs?—Cass alone I could've handled, no trouble. I got my little friend tucked out of sight, but he tickled me working his feet around, the way I couldn't help laughing like somebody'd left me money. This Cass he says, 'I declare to God I think you got a shoat under your coat.' Why, I told the son of a bitch, I says, 'I'm just taking him to his mother, a'n't that all right?' They never believe you if you're from out of town. Then in

the follering argument the thin one—that's Jack Jellicoe, meaner'n a cat turd, you want to keep away from him—he leaned his club on the back of my head. I still got the lump, been here three days waiting for the Public Defender to come back from wherever he's resting his arse amongst the lilies, and they got the pig. See, I'd come to think of him as *my* little pig. Bugger me blind if I think the original owner ever saw hide or trotters of him again, and they call this a King's Republic?"

"They do for a fact. From out of town, you said?"

"Born and raised amongst the Ramblers. I might be one of Boss Gammo's own get—of course he said that about every promising sprout in the gang, said it'd been sired by the blunt end of a hurricane and the hurricane was him. Ever hear of Boss Gammo?"

"Why, a caravan gang that called themselves Ramblers came here to Nuber eight years ago. That name rings a bell."

"Do say!" Bosco's heavy face grew alert; sad, too. "Boss Gammo he never cut his hair, tied it behind him with a hempen string. Said it was his strength, like this Simpson or Sampson or somebody."

"That's the man. They only put on one show. Good entertainment I thought—I'm a storyteller by trade myself—but then some crud started a riot, heads got cracked, the police ran them out of town. Since then all

Ramblers have been turned away from the Nuber border posts."

"If that a'n't just like a King's Republic! Eight years ago? Four years after I left'em. Was his hair a-whitening? Gammo?"

"Pepper-and-salt. But I got only a glimpse of him, Bosco."

"Aye-so." The big man rocked himself back and forth on the straw, assailed by grief. "Eight and four is twelve, a'n't it? And I must be crowding thirty, like. Why, I could lick Boss Gammo now, if I'd ever catch up with the lot. See, Demetrios, I figured to lick him when I was eighteen, but that was too soon, and when the stars quit twinkling inside my brains so's I could get up off the ground, Boss Ganimo he says to me, 'Bosco, there a'n't no room for you and me both. You'd come up ahint me one day,' he says. I won't say I wouldn't've. Picked on me, that man did, oncet he prac'ly grabbed off a girl right out from under me. 'Come back,' he says. 'when you think you're big enough and dam-fool enough, we'll talk about it some more.' Why, I could lick him now for sure, only I can't find'em. Last year I chased a rumor up into Adirondack Island. I been here and there—Jasus, I've even lived honest now and then. With a lumber gang, and up to the iron mines at Hallo-way, oarsman a while onto the Albany ferry—that's nearabout slavery, that is."

"I hear there are several Rambler

gangs nowadays."

"But Gammo's is the one and only original. Boss Gammo he think up the whole idear—mule-wagons, singers, tumblers, news-carrying, fortune-telling, the whole bit. Them others don't amount to shit alongside Gammo's. I could've joined one if I wanted. It's like laid onto me, I got to catch up with Gammo's. Sometimes I get thinking, O Jasus, what if Gammo he's gone and died on me, the way I'll never have no other chance to beat up on the old son of a whore. They 'wouldn't change the name, bound to be still Gammo's Ramblers. What if it was Bosco's, hey? Bosco's Ramblers, how's that sound?"

"Sounds great."

Through the waning of the afternoon Bosco talked on about a world that Demetrios knew of as though it hung like a distorting curtain between him and the vanished other truths of Old Time. There are pirates in the little islands of Moha Water who take an almost fixed percentage of the trade between Adirondack Island and the republic of Moha that precariously owns it. *Angus, could you not come to me?*

Except when they steal children or women, or torture a captain for information about other shipping, that's almost a comfortable sort of piracy there in Moha Water, like a god-damn tax, nothing like the vicious operations in the southern Hudson Sea. Down there the buccaneers have virtually closed the

area to all vessels except the most swift and well-armed, and so now the pirates range in search of victims far up and down the coast, and some time soon the King's Republic will have to clean them out, which means a navy and likely a small war. Some say the people of Conicut are hand in glove with'em. *Solitaire . . . Paesan . . .* Yet the world that Bosco was idly holding up for him to see had its own power, its own pull.

Red bear are seen more and more often these days on Adirondack Island. Bosco himself had been shown the pelt of one at a settlement called Saubel, and it covered the whole floor of a twelve by fifteen room, no lie . . . In Vairmount they are plagued by a kind of wolf like nothing anyone heard of before, monstrous, black, long in the leg and [folk say] supernaturally clever as the Devil himself . . . Bosco had heard—but was not sure he believed the tale—of an isolated family somewhere in Hampsher completely destroyed by a swarm of the small red-brown rats, that acted like a swarm of ants . . . In Main, or anyhow somewhere in eastern New England, there's a tribe that worships the brown tiger, calling him Eye of Fire . . .

Slowly in gray-green light the afternoon perished, dwindled from the barred window. Putney brought a dinner of stew and flabby tea. In Cell 3, soft snoring shifted to tremulous ancient song:

"I hope to read my title clear
To mansions in the skies—"

—and again, without change, and again. When Putney set food in there, the old voice pleaded: "I want my vitamins. I want my vitamins. I want my vitamins."

On the far side of the corridor, well beyond any reach from the cells, Putney placed two tallow candles that might sputter half the night. "I want my vitamins . . ." No sound came from Cell 1. Putney hastily slapped down a plate in there and backed out muttering something Demetrios could not interpret.

"Some day, Put," said Bosco, "you better give Gran'dad his vitamins. What be they anyhow?"

"None of your mothering business," said Putney in an evil temper, and slammed the door again between his privacy and theirs.

AN HOUR faded, and the barred window high in the wall was giving on a darkness profound and starless, yet there must have been a field of brilliance beyond the shroud of the oaks. Demetrios and Bosco had shoved their dirty plates under the door, where Putney collected them in glum silence; the old man in Cell 3 was snoring, the other cell as dead in quiet as before; Putney's door slammed again and no more was heard from him. A breeze drifted through the window, cooling the

cell, touching the candles in the corridor with a restlessness. Their warm small light, abandoning Bosco to the shadows, shone on the verticals of the bars with illusion of softness. You could push your hand clear through them. Someone had.

Two hands, rather small. The fingers curled over the metal, pale separate lights. A face was pressing close to the barricade deeply shadowed by it, and it was rounded like Garth's with heavy eyebrows under yellow hair, but more delicate, with a certain sweet recklessness that Garth had left behind or perhaps never allowed himself. "Ssst! Hey! Demetrios!"

By standing on tiptoe Demetrios could bring his eyes level with the boy's. "You must be Frankie." The eyes sparkled with the delights of danger.

"Garth's here too. I'm like sitting on his neck."

"I can't hardly gosemp lace anywhere without the Plague coming along," said Garth, unseen. "Be you by lone, Demetrios?"

"You'd be lost without me, Clunk. You know I'm the brains of the outfit. No, there's another ga with him."

"You can trust me, kid," said Bosco, moving on silent bear-feet to the door of the cell where he could watch the corridor. "I'll keep looksy, Demetrios—go ahead and talk to your friends."

Frankie frowned a question about him; Demetrios nodded—

Bosco wouldn't peach on a fellow jailbird. Demetrios strained higher, trying to see Garth; the sill was too wide. Close at his ear Frankie murmured: "Going to spring you, duck-soupy it is."

"Lordy! I'd have to get out of town then."

"We all go," whispered Frankie. "You, me, the Clunk—me and the Clunk got nothing but hell at home since Ma died, the way he keeps bringing home them dirty pigs and never sober—"

"Come on, Plague, he don't want to hear about that. But that's how it is, Demetrios, we all want out. Mister Angus he's shook up—"

"God, you've seen him?"

"Sure have. Listen, there's a purge going in Inner City. His mother—oh, he'll tell you about it. They're after him too. He slipped out the north gate last night, him and the dog, had to knock out a guard. By daylight he worked around through the woods to the Redcurtain Street side, took a chance asking his way to Mam Estelle's, you was gone when he got there. Mam Estelle hid him up safe. I talked to him there after I seen what happened at the Meadows. Mister Angus come, see, for to tell you it's worse for you than you thought. Heard people talking about you. Calling you an Abramite and a foreign spy. It's the Abramites they're purging, only that ain't all."

Then Angus—Angus—"A spy

from Missouri no doubt."

"Huh? Oh—yeah. This purge is the big one, he said to tell you. We better all get out, nothing else to do."

"What was it about his mother?"

"She—I druther he told you, Demetrios. She's, like, with them people doing the purge. They're—*killing* the Abramites, in Inner City. And some others they don't like. Well, Mister Angus didn't want to risk drawing trouble on Mam Estelle, so he'll be out in the woods now, him and the dog, and the Professor, and your woman. Me and Frankie come here to get the layout of this place. Only that one old fart minding it tonight?"

"Only him," said Bosco, turning his head. "Couldn't help listening. It's dead as a tomb here all night long. Count on me, boys—I'll lend a hand. Nobody wants out more'n I do."

"Me and Angus will be back."

"And me," said Frankie.

"Okay," said Demetrios to all of them, feeling frightened and old, and shaken by the miracle of love redeemed. "Okay."

"After we spring you," said Garth, "we join your woman and the Professor and Frankie at a place I know on the South Road."

"No, I come back with you and Mister Angus to spring him," said Frankie. His hands jumped from the bars. "Hey! Clumsy!"

"We'll see. Le' go my hair, Plague."

"Balls to we'll see. You got to have the brains of the outfit with you. Besides, this is the happenest day of my life."

"We'll see," said Garth, and Frankie's face receded in darkness, a candle going out.

Bosco said: "You really got friends." He spoke with envy.

"You'll come with us? We could do with another friend."

"I'm your man. Where will you go, you think?"

"West—ah, I don't know. We must all decide. I dream of going west—and yet it'll all be under water, the places I knew."

"Like Gammo's Ramblers—into my head all the time and won't let go. You be an Old-Timer?"

"Thirteen when the bombs fell. Loved one world, feel lost in the other. But the old one's gone. Downstream with time."

MY MAM ESTELLE wrote *no more in her diary that day, though she was not with the great corn spirit, indeed she didn't work in much afternoon tea of any kind. By seven the place was jumping with evening customers and the girls working their ass off to coin a phrase, and right up to then Mam Estelle had been Busy, too busy and worried to write the Story of her Life, and so am I, so am I who write this book, for I must tell how Angus the son of Stephen came to the side door of Mam Estelle's Pub-*

lic Entertainment Facility like any tradesman or beggar, and was admitted by the girl named Solitaire, who saw how grief and anger were clawing his heart and chewing his vitals, and weariness riding him like the black ape, and his own great gray hound could not protect him. It busies me and worries me—the passions always do—I ought to be carving cherrystones with the Lord's Prayer, but God, there's no living in it.

"Will he come in then?" says Solitaire, and he did, into the kitchen where Mam Estelle was sitting with some innocent morning tea—no corn spirit neither, just her last peaceful cup of the day—came in with a backward look for the alley like a man pursued, and he asked for Demetrios, and was told man Demetrios had gone to the Town Hall hours since and was not returned. "That's bad," said Angus.

Solitaire was looking into him, she in her slavey's smock, gray smudge on her cheek, turban of grubby cloth about her hair, and she said: "He is scratched with brambles. One time Solitaire was scratched with brambles and she saw a hole in the brook that had no bottom, the water ran black out of the heart of the earth—will he come sit down and rest, himself it is?" And Angus saw through his own pain that she was concerned for him in a way that (he thought) no one before had ever been concerned.

She touched Brand's head. The dog whined gently and leaned his shoulder against her little thigh, too polite to fling up his paws on her slenderness. "He likes you," said Angus. "Don't be afraid of him or me." The slavey's disguise was a nothing to be sure, a curtain for other people. He looked through it, scarce aware of it, discovering the heart of strangeness.

She said: "Solitaire is not afraid. Oh, she found lovingkindness here a while ago. But what happened to hurt him?"

She could astonish him. Through shock and exhaustion after the night of violence—after all we know, and you might as well also, that his mother had bedded Senator Pry, the coming man of the hour and King Brian's instrument in the purge, which was somewhat like pissing on his father's memory, and for Angus the graciousness of life in Inner City had been ripped away like the cover from a sewer—through his misery Angus understood that Solitaire was asking about himself. "Oh," he said, "I saw the black waters too. I knew they were there, I must have known it."

"Well," said Mam Estelle, "sit down, sit down. Pull up a chair for some tea, and what do you want with our man Demetrios?"

"I must warn him." Soon they had the necessary information out of him—his name, his place in the crazy world, his meeting with De-

metrios—or I should say that Mam Estelle did, for Solitaire asked no questions, only moved about watching him, now from the light, now from the sun-shadow. You might have thought her transparent, a ghost of smudged beauty blown here and there, a captive light driven by the turning of a mirror.

She saw a boy with red-brown hair, who wore no white tunic now though surely born to it but a gray jacket like a workman's, a gray loincloth, luxurious sandals. On his wrist was a fantastic little watch, clearly of Old Time, at his belt a leather-sheathed knife; at his back he carried no bow nor quiver, but one of those long carry-alls—where I come from we call them bac-pacs. She saw a face of beauty and gravity—boy, man, angel, no need to wonder—coming to her out of nowhere, in trouble and in need of her.

He saw a girl wearing innocent secrets like protective garments; so he would always think of her, even when secrets were put aside.

Forgive me if I rush you along so. I do promise to fill you in on all the Facts that you so clearly have a right to know in all their bustling factiness. But to me your novelist the essential thing is what Mam Estelle saw: that Solitaire was no wraith at all but a woman in love. It can happen to anyone—pity we are so seldom warned. And Mam Estelle saw it had happened to Angus at the same time—one of the rarest

coincidences in this world, in most of the worlds I know.

“WHAT PART of the west you from, Demetrios?”

“Missouri. They called it mid-west in those days. Have you traveled much in that direction?”

“Not much. Couple years ago I got as far as the coast of the Fresh-water Sea—that’s what the trappers call it; I was with a party of them, for the season. Our base camp was near a puny little settlement called Shatawka, goddamn natives. They called the Sea Lake Erie and said you could drink it. I tried it—try anything once—Jasus! Never trust a native. Inland though, the brooks and springs are pretty fair. It’s bad earthquake country. No heavy shocks but small ones day after day like God or somebody couldn’t quit growling to himself. They say one day he’ll throw a big one. The beaver don’t mind—real thick around there and north of there. We got silver fox too, and marten—of course the damned red rats rob your traps all-a-time. Game’s easy to get. There was a brown tiger scare while we was there—robbed a village to the north, but we never saw him. I never have seen him, wonder sometimes if he’s folk-say . . .”

A casual, throaty voice, an innocent-seeming, blunt, thirtyish face in the candlelight—Demetrios warmed to him. Himself unsure and tense, as if already gone forth

to dare the roads and the wilderness with diminishing strength and no sight of a goal, he found Bosco's talk sustaining. Bosco was no storyteller: he knew these things directly with his senses and with very little imagination—the feel of an enslaved hand on the oar; the gloom, acrid stench, the peril of a mine; the stillness of jungle that is no stillness but a teeming of life, a passion latent in the overabundance, a patience like a serpent's hot slow patience, a waiting that may break forth in a roaring or a cry, but only for a reason. It made the hour pass—

"I hope to read my title clear
To mansions in the skies—"

"He ever sing anything else?"

"Not since I been here, just them two lines. That and his vitamins. He's got like a home here, Putney says—ever' time they turn him loose he quick does something dirty so to get himself back in. You know—nourishing stew, no worries except about his vitamins, whatever they be. Cell 1—that's different. They brung that man in late last night, flung him there—he couldn't hardly walk. Not a sound out of him except breathing for a while. I hollered to him and pounded on the wall, no good, nor I couldn't get anything out of Putney, just gibbering. Ha'n't even heard the breathing since about the time they brung you in. That dish Put took away

hadn't been touched. They let people die accidental-apurpose, here at Nuber?"

"I never thought so." *What do you know about anything, Demetrios, you who filled your mind with fancies and farewells while another world grew up around you—*

"Maybe it's just Put. Real burrow-cat, that man. The ga in there could be dead for days while Put waits for the brass to tell him what to do. Hark!—"

A MUFFLED disturbance in Putney's room—in a moment the door opened, releasing stronger candlelight and a glimpse of Putney himself, pop-eyed on his cot, bound and gagged. A dog, a boy, and a man hurried to the cell door, while Garth remained on guard over Putney. Angus shoved his stocking mask in his gray jacket. Stiff-legged beside him with lifted hackles, Brand studied the dark, sorted the smells. "Damn this thing!" Angus was struggling with the key.

"That'n' maybe," said Frankie correctly. Angus flung open the door. "Brains of the outfit," said the boy in the mask.

Angus caught Demetrios in a quick embrace. "I was afraid for you. Have they—"

"No, nothing bad, I'm all right." Dizziness swirled in him. Who ever knows joy or pain in the moment of their presence? Only the differing intensities of light; later, remembering, we give them names. "This

is Bosco, who wants to come with us. He knows wilderness, and the roads, places we never heard of."

"Step closer, Bosco, will you? I'm nearsighted." Bosco moved into the field of ruthless inspection. Angus the polite, confused boy of yesterday was surely not gone, but merely hidden in Angus the commander because there was no time for him. "All right—good. Come with us." There seemed no question of challenging Angus' right to decide. In this crisis someone must be ready with swift rational eye or no: let it be Angus, who said that power stinks, but who understood the exercise of it.

"I'm in for ripping off a sucking pig, Mister."

"Maybe I'll ask you to teach me how it's done. Got any left?"

"Cops got it." Bosco was looking into Cell 1 and as Demetrios was about to join him there he muttered from his mouth-corner: "Keep the kid out of here."

The man in Cell 1 sprawled naked on the floor, mouth open, his clotted wounds untended; his chest was motionless, and Demetrios knew him. Demetrios turned away and slipped his arm over Frankie's shoulders. "We'll go talk to Garth." Passing Angus, he indicated Cell 1 with a motion of his eyes. "Holman Shawn."

In Putney's room Garth stood watch by the outer door, the eye-holes of his mask a blue sparkle. "Okay, man Demetrios?"

"Okay, Garth."

"About your dream, my aunt said—" Garth glanced at Putney's flushed listening face. "Well, later."

"I want my vitamins. I want my vitamins."

"You'll get your vitamins, o' man," said Bosco's genial voice.

"Will I then? God bless you."

"I hope to read my title clear
To mansions in the skies—"

From the curve of Demetrios' arm Frankie looked up, demanding answers. "What was it in t'other cell you didn't want me to see?"

Demetrios could remember: at twelve only a fool doesn't know that the other side of the coin is sorrow; and Frankie would never be a fool. "A dead man, Frankie. He was an Abramite. They left him there after a beating, they let it happen." Frankie stared, eyes bottomless; the ocean is not concerned with forgiveness. "It's the other side, Frankie. The other side of the hap-penest day of our lives."

IX

*I only come to see You
on your Way*

They say an artist must represent his times. They don't say why: maybe they think the mirror creates the image. If the artist objects, Procrustes is at

*ways ready with his rusty, trusty,
snaggletooth hacksaw.*

—*DEMETRIOS.*

AMIST often rises from the ground in the nights at Nuber, flowing about the houses, which stand lonely—houses always do: islands that people have shoveled together for resting-places of the journey. The mist absorbs the earth-loving touch of footsteps, the sound of laughter under the breath, whispered love and courage. The mist is ambiguity and marvel. One breathes it in as vapor and becomes—let us say, wiser: at least a blurred wisdom is to be found in the fog, an ability to say what might never be said in daylight or under the extravagant invitations of the moon.

Along alleys and avenues where even the trees were drowsing, the ground mist joined a vapor that rolled in through an eastern gap in the hills. Night smelled of salt air, of wild ocean loneliness. Fog yielded sometimes to persuasion of a late candle in a window, or thinned to reveal the thrust of a building's corner, a hitching post, a front yard fence. In all this passage Garth and Frankie were the guides. To Demetrios they conveyed an intimation of the medieval; their ash bows and quivers were part of them, practical as any 20th Century soldier's rifle. Both knew every turning as a fox knows his own hill-

side, knew every step from the sad shack where they had been born, in the shadow of King Brian's Wall, to the Great South Road. That section where the Meadows end, allowing the city to heave up against the Wall, is called Outer Wall Street; some of the shacks lean three-sided against the mass itself, and rain trickles through the haphazard joining. The boys' father, when he worked, was a street-scavenger, selling the manure to farmers at starveling prices.

Demetrios walked behind, now and then touching their shirts or hip satchels for comfort. The walnut stick satisfied his right hand. Behind him came Angus, Brand, and Bosco.

"Have we far to go tonight?" Having spoken, Demetrios was disgusted by that elderly querulous noise from his throat. Angus could not have slept at all during the past night, when the purge began; he would have been traversing the rim of hell while Demetrios lay with Solitaire and the Professor snug in bed.

"Not far, Demetrios." Angus spoke gently. "We thought, when we've joined the others we'll go on to the hant-house off the South Road and rest there, till first-light anyway. I hear nobody goes near it for fear of getting bespooked."

"Good enough."

"We mustn't stay there long, Mister Angus," said Garth. "They could set hounds on Demetrios"

trail, or yours, the way dogs won't usually stop for spooks, nor men won't by daylight maybe."

"There are even some in Inner City who don't believe in 'em." The undercurrent in Angus' voice was not all amusement. "Like me."

"Aye-so?" Garth's voice was troubled, the trouble echoed by an uncertain throat-noise from Bosco back there in the dark—not so deep a dark: a moon was exerting power above the mist, so that the travelers might feel like swimmers rising to the surface into new dimensions of breath and motion. "Man Demetrios, my aunt asked the book about your dream. It said the railroad was a dream-speech—see, that's the science of the—the subconscious, and the real road is going to go over water for sure on a long journey. The book did say that, each time she let it fall open, and she read it right out to me—that is, I don't mean *read*, but anyhow she knew that was what it like meant."

"My thanks to her," said Demetrios, remembering the age of science. For more than a century it had been able to hold in check, somewhat, the human compulsion to accept the dithering of primitive magic as revelation and mystic truth. It could not teach its method of approach except to the very few—(how hard did it try?—Demetrios wasn't sure); nor could it suppress the corruption generated by the gifts that science itself had

tossed to fools possessed of power—how hard did it try? By the time computers were being employed in the commercial development of astrology, tarot, witchcraft, all the rest of the dreary sludge—by that time, long before 1993, maybe we were already done for. "We shall cross water," said Demetrios, "and grow older." He hoped that Garth's love-sensitive ear would not catch the sarcasm and anger that had threatened to erupt through his words like a belch from an acid stomach.

Garth is kind, lovable, good. Didn't he just help me get out of a stinking jail? When was I appointed to turn him into a 20th Century rationalist, in an age that hates reason, supposing I knew how it could be done? All the same—

What is there to hope for? What can we do? Accept the new dark age as inevitable in the rhythm of history?

Periods of special enlightenment do tend to be short—Greece, the European Renaissance—and then the poor startled human race must go pottering back into the cave to digest. False analogies: the human race is not a person, and forgetfulness is hardly digestion.

So—we hope, we make believe that reason can somehow nourish light in private places, through more long dismal centuries when nothing is certain except the power of unreason? What else?

The moonlight explaining the

face of Frankie grew tender.

Why, damn it, Garth is teachable, as teachable as Frankie, or Angus. What if I AM appointed? Self-appointed—it's for me to say. Sort out your own brains first. Demetrios: beginning now.

"This'll be the South Road," said Garth. The mist, no higher than their knees, ran as a river of silent whiteness channeled between walls of maple and evergreen and oak, and the blue-black summits of leaves were sprinkled and sparkling with stars.

Men wanted those: dreamed of approaching them. They did reach the moon and Mars; they did send astounding gadgets to the wastes of Venus, Mercury, Jupiter to listen and scan and crackle reports back to the home planet where they were playing with tarot cards and nerve gas and leaky nuclear toys.

Axiom in man-made ethics: Human beings choose their own purposes, according to whatever complex of desire and information dominates their thinking. Corollary: The purposes will be good (by whatever standard of "good" is being employed) in so far as the desire is good and the information sound. Conclusion (one of many): An old man possessed of relatively trustworthy information cannot be lightly excused from the obligation to teach . . . Define "trustworthy". Define "obligation" . . . Oh, I am bumbling.

I am getting old . . .

THE ventriloquial laughter-like noise of a screech-owl trilled out of milky obscurity ahead of them at the side of the road, two calls close together. The sound was immediately answered—from all around him, it seemed to Demetrios, but he saw Frankie's lips in slight motion, and then the strengthening half-moon displayed the bounty of Frankie's grin. He whispered: "Solitaire did that?"

"Learnt her this afternoon," said Frankie. "(Brains of the outfit.)" He called softly: "Everything's okay. It's us."

A three-bodied shadow emerged, into the mist that seemed about to dissolve yet never did, quite, as though something of it—a softness, a blurring of vision like the myopia of Angus Bridgeman or the hesitations of Demetrios, would always accompany the travelers, quieting the human lust for certainties—and became three separate souls, carrying small packs, daring night and wilderness, young and not young. Here was small sweet Solitaire, and the Professor carrying his lute close-wrapped against the dampness; a thicker, heavier shape turned to the moon the watchful face of Babette.

Angus spoke under his breath. "You know these friends, Brand." Brand lowered his ears, trotting forward smoke-silent. Solitaire reached, to speak to him with her hand. The company was eight.

"O Demetrios!" Solitaire did not

kiss him. She pressed her face on his chest and held him fast, making his lank body a refuge. "Demetrios, Demetrios, sacred to the earth."

"My name—you knew that, love?"

"Demetrios forgets what he's told her. Solitaire never forgets anything." Frankie and Garth watched the road in both directions—no one ever travels the roads at night, even the Great South Road: almost no one; no one respectable. "Solitaire has a thing to tell—not now—soon—some time. Demetrios will make a happiness out of it, could be. Solitaire wants to carry a stick like Demetrios. The Professor is thinking somebody will cut a stick for Solitaire to carry."

"Somebody better," said Babette. "Man Demetrios, bless you, I only come to see you on your way, then I got to go back to my Mam, the way she wouldn't last three days without me."

The company was, in a way, seven. But more than that still, for one of the amazing aspects of love is the traffic it carries on with memory—*now I know this for true, I who write this book, for once upon a time an ancient man, I being then not much bigger than a fly-speck, took me on his lap and said: "Here's a howdy-do! What's a howdy-do? A howdy-do's a little one, a howdy-do's a pretty one, and here's a howdy-do!" I reached and got me a fistful of white beard with a kiss in it. Now the love of my*

father and mother and some others had surrounded me the way the sea moves in perfection around a little fish, but in that moment with Whitebeard—(I haven't a notion who he was, never did know)—I discovered how the universe holds separate beings who can open their own countries of love to let you in a while. So Whitebeard goes with me; but those I couldn't like—why, I treat'em hatefully: I forget'em. Demetrios would carry Babette in himself the whole way, whatever that way was (even now wondering, Shall I ever see her again after tonight?)—her broad bosom, her cheerful directness, round face, open smile.

Angus asked: "May I borrow the hatchet?"

"For sure," said Garth, watching the road. "Any time, Mister Angus, yourself it is. Frankie—?"

Frankie unslung from his belt the small camp-ax of Old Time. He removed the leather guard, and the blade's edge became under the moon an arc of fierce frost. It was evident, in the language of Frankie's hands, that to him the care of the Hatchet was a most holy trust; also that he did not understand why Mister Angus and not himself or Garth should make use of it.

"Man Garth," said Angus, "let it be Mister Angus no more. I have no place in the Inner City nor want none, nor any place I know of at all except in this company."

Garth watched the road. "Aye-so, Angus. Try the oak yonder, where it leans out a branch." Frankie set the Hatchet in Angus' hand, and went with him, pulling down the branch for Angus to cut, staying close at his side while Angus trimmed it with a natural bend for a handle, and then returned the Hatchet.

Then Frankie must rub the edge of it with his shirt. "That Hatchet," said Angus, "has had good care." Frankie nodded, speechless, finding it no occasion for a grin, only for a different sort of smile that glowed and vanished in the white light. Angus brought the stick to Solitaire. She moved out of Demetrios' arms to take it and weigh it in her hand. "It's green," said Angus. "It will ripen."

"Everything does," she said. "The stones, and the stars. Now Solitaire can lean on a staff if she's tired or lazy or cross."

"We must get on," said Garth. "Frankie, watch with me for the wood-road to the hant-house. I might miss it."

"The white stone, remember?" But when the Company had moved on a few hundred slow paces along the open misty channel of the South Road, it was Frankie who said: "There it be. Leave me take front, the way I see best in the dark. You link up one and one behind."

"It's more'n an hour you ha'n't called me Clunk."

Many moments later (not a

measurable time) as the Company moved ahead through what was for Demetrios a tunnel of unbroken darkness, his finger hooked in Garth's belt, Solitaire's in his, the other links a chain of nerves that made them (for a while) one body, Frankie's small treble reached Demetrios: "It'll be never again you call me Plague." Then sometimes Frankie's voice was warning, clear enough so that Bosco at the end of the line would hear it: "Stick in the path crossways." Or: "Briers, briers." Or: "Fallen log, don't nobody tumble." Then at last (clearly not a measurable time): "Brains of the outfit sees moonlight ahead—" at which a fleet ripple of laughter ran through the Company, since Frankie himself had sent the remark down the line with a chuckle in it.

ENTERING the pallid clearing behind Garth and Frankie, Demetrios did not immediately see the hant-house, for it crouched at the darkest edge of the moonlit space where the forest had flung around it wanton arms of wild grape, and pushed through its front courtyard the shaft of a pine now twice the height of the building, but could not quite capture the ancient thing—not altogether, not yet. His eyes discovered a splash of moonlight on a surface of slate that nature had never arranged, and three eyes of glassless windows

above the mute scream of a doorless doorway. Garth said reflectively: "It's them stone floors inside. Been no place for seeds to find a crack, or they'd 'a' done it like that pine wherever a mite of sun come through."

"Colonial?" said Demetrios. "By God I think so. I never knew it was here. I could have dreamed a story for it."

"No reason to know," said Garth. "We're more'n a mile from the South Road now and nobody comes here. What's Colonial?"

"Old Old-Time, before the—call it the age of marvels. This house may have been erected more than three hundred years ago."

"There's Colonial house in the Inner City," said Angus. "It's been kept in repair. They call it the Dutch Museum."

"Dutch," said Bosco—"that was another name for them bloody Injans. Nay, I seen an old house at Albany, I think they called it Colonial, only the gov'ment don't let you go into it."

Solitaire shivered in the crook of Demetrios' arm; Babette had made the sign of the Wheel. "Ah, they were all just people," said Demetrios, "and long gone; and this is just a building that didn't fall apart easily." A barn owl blurted his call and came floating out of an upper window to carry a shadow across the moon. "How good are the walls, Garth?"

"Good—stone. With what's left

of a wood and plaster finish onto the inside, only people must've took to stealing bits and pieces till there a'n't much left. Roof slates too, they be near-about gone at the back—nay, Frankie, don't!"—for Frankie had swaggered near the black doorway and was talking like an owl: "You who hoo-hoo! Anybody to ho-huh-home?" At Garth's protest he demanded: "A'n't we going in?"

The hant-house stood calm in its three hundred years. They heard aeolian murmurs, a rustling of whatever modest life had chosen in this century to make a home here. The Professor joined Frankie protectively by the doorway. Bosco was grumbling: "We got anything for lights? I wouldn't mind the place with a bit of light."

"Got some pine torches and carrier in my pack," said Garth.

"Solitaire could light one," said Solitaire.

"All right." All of them including himself, Demetrios realized, had been waiting on that approval from Angus. In the shelter of Angus' spread jacket Solitaire won a flame from her tinder-box. Two golden faces confronted one another on their own island of light. So deeply tranced was Solitaire in her discoveries that Garth must touch her hand, reminding her of the torch he held waiting.

These are good inventions in their way, pine sticks with a tight binding of rag sometimes impreg-

nated with pine oil—turpentine if you insist. The stick is whittled so it may be inserted in a slotted device like a candlestick, which can be stuck in the ground or in a wall-bracket; around the slot is a guard like the hilt of a rapier, intended to protect the carrying hand. A good torch will burn prettily and rather calmly for quite a while. The age of electricity could easily have mass-produced these foodiddles for sale as antiques, but history says that to its everlasting loss it didn't—something about fire underwriters.

Garth held up his good torch. The Company followed him into the quiet place.

X

if I can teach you to be patient—

Those very ones who believe that everything has been said and done, will greet you as new and yet will close the door behind you. And then they will say again that everything has been and done. —Eugene Delacroix, JOURNAL, 1824.

GARTH's pine torch, its bracket wedged into a firedog of the hearth, shone on the face of Angus, who sat with Brand stretched out beside him. Demetrios watched that dear image with drowsing eyes. What of the poison of jealousy, the making of demands, the sin of pos-

sessiveness? Surely an old man might keep his heart clear of those follies, at least among these gentle few. Must grief inevitably burn because there is one who loves and one who is loved? One compensates. For Angus and Solitaire it was a little different: for a time they would be caught in the same fever. He remembered how something like this had once glowed for him and Elizabeth of Hartford, and might still hold warmth if she had not died. Death had blown it away, and now he found he could not quite recall the color of her eyes.

The Professor's lute sent questions into cobwebbed corners, driving out echoes to play hide-and-seek. The small torch opened the ceiling of the big room to infinity. Solitaire sat by Demetrios on their blanket, and Babette was cross-legged on his other side, her plump shadow dancing on the wall with the shadows of Angus and Solitaire; Demetrios could see her broad kind face if he turned his head. He was going to miss her, if they went west through the wilderness. He would miss Mam Estelle, the girls, even Nuber itself, having consigned forty-seven years of his life to the peculiar place.

Bosco, ready to grab comfort anywhere, had rolled up in Garth's blanket while Garth and Frankie took first watch. After it Angus and Bosco would watch until first-light, and then, Angus had suggested, they might as well follow a wood-

road that wound southwest from the hant-house, paralleling the Great South Road in its beginning. The South Road itself would be unsafe for fugitives, up to the border of Katskil. Garth and Frankie had once tried that wood-road for a mile, running away from home. Their mother was still living then: love and conscience drove them back.

Before the last flower of the torch had fallen Demetrios entered sleep. Westward chugged the homely locomotive, the woodburner with bulging stack, westward past Aberedo, clattering, coughing dirt. It halted at a water-tower, where a man with *Abel Kane* embroidered on his overalls warned the engine-driver: "Careful, man, the water shortage is terrible. Thing is They got to cover the earth with it, and that don't leave much. Can't turn back the clock to Noah, no sir. Likely won't nobody know where he's at till They've done the—uh—hydraulic finalizing."

(I your novelist know quite well where I'm at. My problem is to know where I'm atn't.)

The woman with the market-basket leaned across Demetrios to ask a deaf farmer: "What'd the man say?" A sad little girl with adenoids and a goiter in the seat opposite watched with never a smile. Demetrios replied for the deaf man, or wanted to: "We're going to

Hesterville to see the Water Shortage." She wasn't listening. The sad child's mother stared through Demetrios with dislike. But here already was Hesterville—All out for Hestervi-i-lle!

No way out except down into flat green water, down and down, since the station loomed there below. The train puffed along an embankment, the passengers floated out and down like Demetrios, off the open carriage with the wicker seats—open air, smoky air, lost air—into green water deep and slow. White shapes stood tranquil in green water-air; darker shapes roved up with unknown intent—we all live in darkness, don't we?—*and in gross darkness the people—*

"**D**EMETRIOS." Solitaire spoke gently. "Demetrios made noises." She rubbed his forehead softly, a service she had done before when nightmare trod on him. Confusion drained away. The silly dream was a face gone in a crowd. Ambiguous light was entering the hant-house, whether from dawn or a descending moon he could not tell. The face of Angus he could not find. Where it had been a scar in the wall appeared: plaster had fallen from lath in a patch the shape of North America, and in front of this hung a spider, a good gray scavenging citizen nursing her drop of poison and her own torch of life. Frankie was lying with his

head in Solitaire's lap, looking in sleep more like nine years old than twelve. "Angus and Bosco b. watching outside."

"Is it moonlight?"

"No, day begins. A bird called. Talk soft so Love can sleep.

"Redbird it were," said Babette, her voice as low as Solitaire's in awe of Frankie's slumber. "I can see my way home soon spite of fog."

"Can't come with us?—nay, I know. The Mam needs you."

"Wouldn't last a day and me not there. Will I tell her you'll come back?—oyah, of course I will, I mean, will there be truth in it?"

"How can I say? Do old men ever come back?"

"Shame on you, Dimny!" said Babette, and shook him. "Shame on you for a gloomer! Come on, come out of the bad dreams!"

Demetrios sat up, accepting the morning chill. "Yes—yes, we must find a place where they don't require a license for storytelling." Light was showing him the shape of the ancient structure, once maybe a reception room for gentry in wigs and knee breeches. A stairway curve broke into darkness short of the second floor; the upper landing had dropped, likely decayed by years of leakage from the roof. A heap of plaster and rotted wood lay below the break. "We must look for a place where things can be made better without making them worse."

Solitaire's fingertips spoke love

to Frankie's curls, not waking him. He moved, a vague thrust of hips against the blanket, and quieted, his parted mouth a poem of Eros. "Solitaire has a thing to tell . . . Solitaire is pregnant."

"Oh—"

"By Demetrios," she said, smiling at him in the growing light. "She planned it. She knows her calendar." The lute chuckled from a shadowed place. "For a month she and Professor only played games outside the door. Paesan is saying he planned it with her. So there'd be seed of Demetrios."

Elizabeth of Hartford, her wasted agony, the horror of the birth and double death—yet there was that half-chance, that bloodless statistical encouragement: Elizabeth's own genes might have been the ones to carry the 20th Century damnation. *Most births are still normal—three out of five, isn't that what they say?—when they occur at all—otherwise who would try to prolong the days before extinction?* "Solitaire—my love Solitaire—two months? Three?"

"Nearer three," said Solitaire with pride.

"We'll get out of Katskil, settle in a safe place to wait your time." *Safe place!—where is that?* "Babette, stay away from the Abramites. At Town Hall I was questioned about Abramites at Mam Estelle's. Told'em nothing of course. Fran ought to get out of town."

"Leave it to me. Don't worry!"

She added quaint Old-Time words that folk still deprecatingly used: "Do your own thing, Dimmy."

Angus came in with light around him, rousing Garth, kneeling by Frankie and Solitaire, silently asking: *Is it well with us?* It was the bow-boy blind with sleep whose shoulder he kissed, Frankie whose hair he rudely rumped, Demetrios of whom he asked gently: "Shall we go by the wood-road?"

Solitaire kindled a small fire in the hearth, where Babette toasted bread and bacon. She had brought along other more practical food to start the journey—dried corn and fruit, smoked meat, hard meal-cakes, a flask of wine. Angus had money with him; Garth and Bosco and Frankie claimed skill at hunting and fishing. All the same Babette cried a little, watching them go, in the morning fog that was both confusion and a shelter, down that road which might turn in any direction, maybe toward nowhere. She watched them go—sharp-eyed Garth and Frankie, her old weird Demetrios, sweet mad Solitaire with her branch of oak gaily mimicking the old man's staff—indeed she, with maybe the most to lose, seemed to be the happiest to be going; (but how old was Solitaire, really?—Babette had never felt sure)—and dark-browed Angus with the gray hound who was more like a part of himself than a servant, and the massive soft-footed stranger Bosco who—Babette con-

sidered him tricky: his watchful face was telling nothing of his inward life. Babette watched them go, gave her nose a last wipe on the back of her arm, disconsolately plodded back to her share of the work of the world.

(But much later she rejoined us, as I will tell if I can teach you to be patient with me.)

[Saturday, July 20]

SO THEY went off into the Fog. Babette says, about sun-up, and from what The Boy told us when he come here in Trouble, I better not write what way they went, nor his name neither. People might come and try to read my Book before I burn it, which I wouldn't like to do because it would be Stupid to do that to the Story of My Life if I don't have to, just to keep Information away from the Gunes. She says D himself says he'll be coming back.

He will too, wearing a rainbow, he'll make them look like Fools, drive them out of the Temple like it said in the Book—O how I go on! He was just my old Demetrios that was Janitor, never bothered nobody. Suppose it was on My Account he said he'd come back? He would always lean Way Over so not to hurt People when all the time he'd better of spoke Direct, not put everything like into a Story. Going off into the Fog and maybe not even enough to eat—well, that Garth is a good Boy, and maybe Solitaire got

more ginger in her than I thought and won't be a Drag. Suppose I think about something else, like this Place for an Instance the way it was when I come from Raeford.

Not the coming here itself, that was mostly sickmaking, cars driv Crosswise onto the Road and People dead in them. My Trucker wasn't too bad, he said his name was Al, he'd been taking a ten-wheeler to New York with froze fish. He said everything on the Road went like crazy, maybe it was Blast, he run the ten-wheeler into an Embankment so not to hit a Lunatic in a Ford that come straight at him, and got hurt some in the Head, I mean my Trucker did, but got out and walked away from it, froze fish all over the Road. We was together a few days, walking west because he said he had people to Rochester and what's the difference, anything to be on the move. When he wanted it he would pull me down side of the Road and do it no matter somebody might go by, I didn't care either, I'd just keep still looking at the sky till he finished, all as he ever wanted was On and Off. He found food for me, and fought off a couple-three Gunes that wanted to Share the Wealth. In Beacon they shot him for looting, I crossed the River in a Motorboat with some Crazies that thought it was the Sea of Galilee and they'd see the Savior walking onto it, they wrecked the Boat landing in a Rainstorm and went off northways with

their Ass dragging. I'd had it with them, up to here.

I say I won't write about a Thing, right off I go to doing it. Anyhow I come to Nuber chancelike, not caring. Already the Founders had got the Place in order, a regular Camp with Officers to tell People where to go, what to do. You can always feel the Difference when People got something to work on, not just flopping around like Crazies on the Sea of Galilee. Mister Fleur he was one of those Officers, working direct under Simon Bridgeman. I helped with refugees, the Hot Soup and Bandages bit, and in a couple-three months when Bridgeman's Government wanted to stablish some sex-houses, Mister Fleur's was the first. Mister Fleur used to say his friend Simon was the only Savior of Mankind that ever noticed his People had Balls.

The Sex-house had boys, and some way-outs of various kinds. Simon Bridgeman, and his Word was the same as God's in Nuber, allowed all sex was good so long as nobody was getting damaged. Most people had come to feel that way in those days, we did in Raeford, only I guess the other kind of idears went on as usual too, lately I been watching Nuber get more sick-ass prudish year by year. Most of all Mister Fleur wanted to make sure everything was clean, even the towels. I heard tell he'd been a Doctor before the Crash, though I never heard it from him, he never

talked much about Past Time. While I was doing the Hot Soup Thing, I must of caught his eye, because he come over and asked me, "Will you fuck for a living, my Honey?" And I said, "Why not?"

Mister Fleur was kind to me, and a Friend too. He didn't want women but he liked them. Maybe it's easier to like them if you don't. He'd say things like it wasn't too bad of an Idear to have two Sexes because it made for interesting Arguments that People would never have to settle because they couldn't. D sometimes talks kind of like Mister Fleur, account of Both was Educated.

Mister Fleur was a little sparrowy man, shorter than me but I had a great Respect for him, and he said I had a Good Business Head and a Sense of Order. Once-twice I've seen him pull the Switchblade he always carried to keep Peace in the House, but I never did see him obliged to use it, People got the Message right off and simmered down.

When Simon Bridgeman was murdered I thought it might have nearabout done for Mister Fleur. He was Tore Up. He might laugh some at Bridgeman's Idears, and criticize, but nobody else better, they was Friends and I guess he really thought S. Bridgeman was God, which I never noticed him thinking that about anybody else. He went on a two-week Drunk. Afterward he was like beat out,

gone slack inside. He said the World wasn't worth a Packet of Shit—Present Company excepted of course, he was always Polite. Well, he straightened out after-while, but wasn't never again like when Bridgeman was living.

Sometimes he wanted to get me talking about the customers I'd serviced. He'd laugh, it would give him some kind of High, not the Thing itself but hearing me talk about it. I didn't mind.

It went on like that several years. Mister Fleur kept things Nice. People would come to us uptight—you'd be surprised how often the Yucks don't want to do nothing but talk and maybe collect some Sympathy about Things they can't change like wives and so forth and likely wouldn't if they could. They'd go away feeling better, anyhow quieter. Mister Fleur would say things like how Idealistic it was to work for a Public Utility that was actually in the Public Interest.

In Year 11 smallpox hit Nuber. I suppose somebody brang it in from Outside. Mister Fleur said all Bad Things come from Outside, the Inside is always Sinless like Desert Islands, I don't know all what he meant. Two of our girls died, and a Boy that Mister Fleur loved special come through the Sickness with his face looking for ever-after like a cheese-grater—and couldn't stand it neither but ran away from us, out of Nuber likely, for Mister Fleur broke his heart trying to find him

and never could. Mister Fleur said once that condemning the Human Race was perfectly all right only too fucking hard on Individuals. During that Smallpox he went away a lot into the City helping care for the sick and seeing them die. I guess he'd been a Doctor all right in Old Time though he never would say, and anytime he had to give his name he'd straighten right up to his five foot two and say, "I am Mister Fleur," making the Mister sound like ice tinkling the edge of a glass.

After the Smallpox was over you could see how Old Time was riding Mister Fleur more than ever—it was always on his mind, but worse after that, and the Boy Shawn that ran away, well, that was a Knife into him he couldn't ever pull out. He didn't want me to Talk any more about the Customers, but he's ask me Things about Raeford, and Sam and Stevie and Leda, and sometimes about Marcus. He'd sit by me whiles I talked, and pet me if I got to crying. Then one night he told me he'd fixed his Will so as I was to have the House if anything was to happen to him, I only had to go to the Town Hall the way it was all on record, no trouble, and he would appreciate it if I would keep the small room he slept in the way it was, with the pictures Shawn painted, and not use it for the customers, and of course I said I would and always have, the pictures are kind of Weird. One is a great stud horse like climbing a rainbow that

Shawn painted him all purple and yellow, you can't think how a Horse would get to look like That. Once I showed Demetrios that room, and he said, "God Almighty, Stell, what became of the Boy?" All's I could tell him was, he went away, we couldn't ever find him.

So Mister Fleur said that about the Will, and then he said I had a Good Head, and I wasn't to cry any more about Marcus because that was the kind of cry that did me no Good and I must make it like the Scar on my Leg—well, Jesus God, you can't do that, but he meant it kind. He went off to bed Peaceful, I remember, without no Drink in him. Come morning we found he'd gone to bed perfectly natural and then rammed the Switchblade in under his ribs.

He wasn't old, nor Sick or anything. I don't understand how a Person could do that no matter how Things hurt—I suppose it gets to be like not caring, maybe, but wouldn't they always want to know what happens Next?

ALL DAY the wood-road led the Company south and southwest, in a prodigious quiet for which Demetrios' ears were not ready. At Nuber, even in the slack dead of night, one heard at least a contracting of house timbers, rustle of mice, drop of spent coals in a fireplace, dog or cat noises, a murmur, a footstep; by day the continual street sounds—wagon

wheels, clop of hoofs, bray of donkeys, peddlers' cries. Here, not even wind. All day the fog never truly lifted, merely thinning to admit watery light and a sufficient view of the road. At the noontime halt—the Company sensed rather than saw that the sun was overhead—Demetrios asked Bosco if wilderness always imposed this quiet. "My ignorance shames me," Demetrios said. "No wilderness existed in Old Time except very far from the places I knew, and then I was spending all my time in Nuber, that hot-house, while wilderness grew back around us and all I knew of it was folk-say."

"Where there's a road," said Bosco, "even a wispy one like this, it a'n't wilderness exactly. Real wilderness, you work from tree to tree, and remember your back trail. Some kinds of jungle, like western Moha near the Ontara, you got to cut your way. I don't understand this road myself. Never seen a woods road go this long without getting no place. Nor like you say, this quiet. There'd ought to be animal sounds, not just them birds now and then. I believe it's the fog, and the 'umidity. Our sweat smells, see, and the critters catch it and keep still. Like everything was afraid of man, a'n't it strange?"

"Funny deer-tracks back-along," said Frankie.

Bosco tolerantly regarded him and his brother. "Wa'n't deer-tracks, Frankie. Them was boar,

and a big feller." Sitting weary between Angus and the Professor, Solitaire shivered; she could not have done this much walking in a whole day since the time when Demetrios found her, and her first enthusiasm had dimmed in fatigue; Bosco saw it. "Not to worrit," he said. "Boar a'n't likely to bother you unless he thinks you're hurting him, or you go crashing into some place he figures is his'n. Besides, them sign was made yesterday."

Angus nodded, watching her. "Brand wasn't interested. He would have been hot for work if the smell had been fresh, in spite of picking up that rabbit for breakfast this morning."

"The little thing." Yet Solitaire's hand moved in affection over Brand's ferocious head.

"He must kill to live," said Angus, in futile distress because the world could not harmonize with what he saw of this woman's nature.

"Solitaire knows that," she said. "People too. Meat is good. Beasts all, all beasts," said Solitaire; and hearing her small, disturbed laugh, Demetrios dreaded the next moments, for she would be weeping uncontrollably, almost silently, her hands palms upward in her lap as if waiting for alms that no one knew how to give.

The Professor heard that laugh too, and before the flood of tears began he took her lightly in his arms as anyone might take a child

in trouble. Angus stared at Demetrios in amazed distress. But words could not be used while her trouble was on her, and if he went aside with Angus to explain how this would pass, how it was a thing one accepted if one accepted Solitaire, she would see them go, and a rage might follow. For she had her rages too, though no one was ever hurt by them except in spirit: would Angus still worship after witnessing one of those?

Garth and Bosco were looking away in heavy embarrassment, but Frankie, after his first moment of alarm, searched rapidly in his hip satchel. He brought out a fragment of admirable carving—it was applewood, Demetrios thought. A fawn lay curled like a sleeping kitten but with open eyes. The treasure was no bigger than that Japanese netsuke of a laughing old woman which had been one of the marvels on the desk of Dr. Isaac Freeman, very long since. Frankie laid the fawn on Solitaire's open palm. "Garth done it," he said. "You might like to look at it. I a'n't no good at them things myself."

The tears stopped, the fingers closed. "Frankie—O the eyes of him!"

"You can keep it if you want," said Frankie. "I got about a thousand more. He does 'em all the time, my brother does . . ."

IN EARLY evening the Company reached a spot where the wood-

road touched the remnant of an Old-Time paved surface, the kind the ancients called blacktop. Dimly beyond the junction the wood-road continued. The Old-Time road was so desolate, so far from any sense of intelligent creation, it seemed less like evidence of humanity than the trail they had been following. On that they could at least find, though intermittently, the dint of wagon-wheels gone by a week or two before, but the Old-Time road offered no more than a long vanishing aisle under dense growth, a surface of black dull patches nearly hidden by grass and weeds that had pressed through tiny cracks, started by frost or earthquake or time, and made them big. Here and there seedling trees were pushing into light; these in a few more years would do away with even the memory of the road. And nowhere in the green cover could the Company find any human mark. Animals would have been crossing it repeatedly, the grass springing up behind them, but had formed no visible trails down the length of it; possibly any human creatures who looked along the desolate way would have chilled themselves with the thought of ghosts and wanted no part of it. But Angus said: "I have in my head a sort of compass. I think it speaks true mostly. Spin me around, I still know somehow where the west is, if there's any daylight or moonlight—it doesn't help me in real darkness. I used to

astonish my family with it when I was a boy. Well, my compass says this wood road has been trending a little bit east for the last hour, as if it meant to angle back toward the Great South Road where we daren't show our faces. But the Old-Time thing is pointing clear west." He shook his dark hair behind his shoulder; one of his rare smiles touched Demetrios. "I smell the Pacific in front of my nose, three thousand miles away."

Maybe, thought Demetrios, that was how it would be for all of the journey, and how it ought to be: Angus, the wisest of the young, would be the true maker of decisions and giver of directions, but he would employ his uncanny tact and he would seek the old man's counsel. Under such conditions, possibly a little democracy of seven souls could be made to function without doing too much violence to seven patterns of need. A democracy of seven plus Brand, who might take occasion to vote now and then after his fashion.

This was probably the moment, your novelist supposes, when Demetrios-sacred-to-the-Earth decided to found his own republic, if he could keep it. A republic needs mothers to breed its sons and daughters. He knew that.

THE COMPANY covered better than a mile of the Old-Time road, finding no change in its

quality, and camped comfortably beside it before dark. It seemed safe to build a good fire. In this quiet and loneliness—the fog was with them still, faint in the air but sad like all memories of antiquity—the thought of pursuit from Nuber appeared ridiculous, even to Angus. "The powers of Inner City," he said, "have nothing against me except my existence. They are rewriting history, by the way, did I tell you? My uncle Simon may have to appear as an arch-villain, Antichrist, whatever, instead of a saint. Saints can be a mite inconvenient to a King's Republic—sooner or later some crackpot is going to insist on imitating them, and that means more damn work for the cops." He laid gently on the little furnace of the fire the stick he had been using to stir it up. "My disappearance ought to suit them almost as well as—say, a sudden fatal illness or a stiletto in the back. Of course it may worry them a bit, can't help that."

"Will Angus go back there some time?"

He gazed at Solitaire a long time across the fire. "Nay, I think not. Vengeance is nothing but a sickness, and what other reason would I have? To save the Abramites from persecution?—they are already under the wheels, and I have no power."

"One day," said Demetrios, "the Abramites will themselves be the oppressors. An old rhythm of his-

tory, another punishment by nature of those who were too busy rewriting history to read it."

"I think I understand you," said Angus. "No—no, I won't go back." He leaned toward the fire, seeking to bring her face nearer to his eyes. "I've no wish for any place where you couldn't safely come with me." From his quiet speech no one could have said whether "you" meant only Solitaire or all the Company; but the Professor's lute broke out in a sudden music, and Frankie came quickly around the fire to kneel by him and watch his sovereign fingers on the strings. They were carrying a familiar melody in and out of shadows, letting it play beatific games with itself. On the exact moment, as the Professor nodded to him, Frankie sang, shy at first but then with the assurance of an angel, the air, said to have been composed by a streetcorner musician of Brakabin in recent years, his name no more known than the name of Demetrios, certainly not a music of Old Time:

Before the dark falls
your flesh is amber fire
to warm my midnight.

Before a light spreads
your mouth gives solace of night
to cool my noontime.

I have not wondered
that flame and coolness perish:
to love is mortal.

XI

They noticed a Sign saying DEAD END

... But we had enemies which he called magicians, and they had turned the whole thing into an infant Sunday-school just out of spite. I said, all right; then the thing for us to do was to go for the magicians. Tom Sawyer said I was a numbskull.

—Mark Twain, *THE
ADVENTURES OF
HUCKLEBERRY FINN.*

ALL OF the next day, and the next, the ruined road led the Company west and a little south. The fog was a burden, full of sounds. It seemed to Demetrios that he was hearing out of the mist what could never be heard again, absurd with antiquity. Wasn't that a police siren beyond fog-shrouded trees?—not the full scream but the yow-yow-yow patrol cars used to make to clear traffic out of their way? "Durn parrots," said Bosco. "Them little whitey ones."

"Ayah," said Angus. "My mother keeps one in a cage."

An hour later the siren made its other fearful cry, the one for accident, disaster, fire. "Durn-by damn," said Bosco. "Don't often hear catamount sound off like that in the daytime."

"Overcast days," said Garth. "Or if he's horny."

"I hearn one last night," said Frankie. "Same, likely."

Demetrios could accept it. When in time another shrillness sounded, faint and small with distance, he could scold himself for hearing the noon whistle of a factory or town siren. But he asked the boy with the Old-Time wrist-watch: "What's the time, Angus?"

"Noon straight up, man Demetrios."

Auto horns—the afternoon in mid-flight—auto horns—anyway a confused hooting or bleating. Was the mist itself generating this madness? It had seemed in the last half-hour to be lifting. Now and then Demetrios had glimpsed the sun's white blur, finding it too strong to look on directly. Moose or deer trumpeting? A daytime owl? He saw Garth frown and Frankie look at him with inquiry, but no one spoke of it, and presently it ceased.

They noticed a sign saying DEAD END.

"Crossroads, huh?" said Bosco.

"God," said Garth, "I wish I could read."

Bosco caught Demetrios' eye. "I don't know as that's what it says, but you can see another road coming in here, north and south."

The placard was of ancient metal, raised letters partly obliterated. Beyond it the black patches and disorderly green cover of the

Old-Time road continued. Brand sniffed at the sign and raised his leg. "Sure I'll teach you and Frankie to read," said Angus. "Or Demetrios will, or both of us."

"Solitaire can teach some," said the frail pregnant lady. "Solitaire had the books a little, once."

"Books makes folk discontented," said Bosco.

"I don't mind discontent," said Demetrios. Bosco shrugged, amiable, finding it not worth an argument. "Let's go on west. If it's really a dead end we can turn back."

THE OLD blacktop went on more firmly if anything. Perhaps someone had played a joke, long forgotten; or the road had been extended after the sign was placed; or whoever was carrying the sign got sick of it and rammed it in the ground just there—it's a crazy world. When later the Company began to hear a vague roaring, felt in the feet and knees and guts, Demetrios refused to think of heavy trucks pelting down a highway through air blue with poison to feed a monstrous city. "Must be a real old man of a waterfall somewhere," said Bosco.

The road was veering slightly south. The noise diminished. When it came time to camp for the night they still felt its booming in the ground but hardly thought about it.

Once long ago, a day or two before Aberedo, I dreamed my father was living, and it dismayed my witless dream-self though I had loved him, though we were friends in an easier, kinder way than son and father ordinarily can be, because he was not vain. If with a wand or a prayer I could make Old Time return, what would I do? . . .

Demetrios also brooded on his memory of Old-Time maps. They could meet no great river before the Delaware. Were they already approaching it? The sound droned on, chaos talking in its sleep.

Angus was taking the first two-hour watch. Garth with Frankie would have the next, then Bosco; Demetrios with the Professor would take the last, that led into dawn. Demetrios sought his blanket but feared sleep—he did not wish to dream of Hesterville. On the other side of the fire Solitaire and the Professor sat talking. Her lips moved, close to his ear; his face expressed innumerable changes of doubt, assent, agreement, brooding. He had put away his lute. He seldom made explanatory motions of his hands, but his fingers often danced on the bridge of his right arm, and Solitaire watched that. *Ah, Paesan! Maybe you don't speak because you don't want to. If voices reach you, if a certain few love you and discover your answers, it is enough?*

The dark was lightened by a blurred moon; overhead Vega, a

few other eternal lights. A transitory music disturbed Demetrios, appallingly like the noise made by the radio of a quiet car driving by in the distance; he heard or imagined muted motor noise, passage of tires along damp pavement. It happened again. He could see now, in the night depth, part of the configuration of the Great Bear. The mist was surely dissolving under a breeze; he saw the wavering of the black lacework of summer branches. So, in among them the wind rubbed a few together and whined its musical breath across them . . . Solitaire was kneeling by him. "Angus spread his blanket by the spruce tree," she said, "before he went on watch."

"Yes." Her hand was soft, a little heavy on his arm.

"Nothing comes between Demetrios and Solitaire."

"Nothing."

"Paesan knows too. It's a need."

"Understood."

"Angus is gentle. The child will be safe under his loving."

"Go to him. This isn't Old Time."

"What about Old Time, man Demetrios?"

"Ah, nothing. Go to him, love."

He had not been certain until then that his love for Angus was firm enough to let him say it. Old mythologies die painfully; but she would understand in her own fashion: there was no measuring the strength or direction of her wisdom

which was so much like her madness (said Mam Estelle once) that it was silly to draw lines between them.

Perhaps the blue ice of Vega was not quite clear of mist. He heard and felt the waterfall, continuing not forever, only till the next earthquake, next shift of climate in the four-billion-year time clock—or whatever the estimate was when science ceased to be heard. He roused heavily from sleep. Bosco was refreshing the fire with new wood. “Is it my watch?”

“Nay, only midnight. I’m going on. Sorry I disturbed you.”

“No matter. All quiet?”

“Quiet enough. Garth and Frankie heard a wolf—wa’n’t close by. Might’ve been just k’yote-dog, Garth says.”

“Too deep for that,” said Frankie, and he spread his blanket by Demetrios. “It were a wolf, by lone.”

“A’n’t he a pisser? Now if he was my little brother—”

“Think what I missed!” Frankie chirped, and settled himself for slumber. Garth rolled up on his other side; but Frankie was restless, and soon whispered: “Demetrios, be you much asleep? Would I talk you into telling me a story?”

“Don’t bother the man,” Garth yawned.

“I’M NOT bothered.” Demetrios sat up in his blanket. The night held an unseasonable forest

chill, and his bones were aching, not adapting well to sleeping on the ground. “You might, Frankie. It’s only the truth there was a young painter in the old days of Peranelios, marvelous skillful, though I can’t tell you whether he became famous, in spite of the fact that I know everything. His name was Mister Jon and he wished to paint heroes.”

“Is painting like singing?”

“Somewhat yes, someway no.”

He drew Frankie into the hollow of his arm; his left hand fed the fire with little twigs; warmth quieted pain. “More like than unlike, and storytelling is like both. Mister Jon (who wasn’t much older than you) had no ambition except to be the greatest painter who ever lived. He consulted Bald Ape-Man (the most respected critic in Peranelios) about this, and Bald Ape-Man asked him: ‘Do you want to be the greatest painter who ever lived, or do you want to paint?’ Being in a sense the brains of the outfit, Mister Jon got the point, and set before Bald Ape-Man a nice ripe melon he had brought, to acknowledge the fact that he had so much more sense than most critics. You always bring something if you consult him; a lot depends on whether he eats it or throws it at you. Then Mister—”

“Well, which?”

“Which what?”

“Did he eat it or throw it at him?”

“Oh. Some say one, some say

another—the kind of thing a storyteller runs into constantly. Mister Jon, as I said, wished to paint heroes because he thought they were interesting. I don't know why exactly, but in Peranelios, same as anywhere, the problem is to find them."

"Where's Peranelios?"

"Other side of the Never-Today Mountains."

"I thought prob'ly. Like the fairytales my aunt tells, things always happen where you can't go. But," said Frankie, warm and drowsy, "I'd rather listen to one any time than go to sleep. Any time."

"So would I. Mister Jon asked his father if he knew where to find any heroes. Mister Jon's father had fought in the wars against the pirates, was in fact aboard the flagship when the fleet crept before dawn through the Narrows of Gor to attack the pirates' secret harbor. He had no idea where Mister Jon could find any heroes, and was cross with him for interrupting a glass of beer. Mister Jon drew a sketch of him looking cross, and left home that night to look for heroes. The picture bothered him by looking more like himself than like his father, but much later, when he was hard up, he managed to sell it to an Admiral who had known his father, for the price of a night's lodging and a bowl of soup.

"On his first day away from home he came on a brawny young

armored horseman with a lance confronting a fearsome fiery dragon, which was just what he was looking for. He asked the noble youth: 'Would you just hold that lance a mite more slantwise?—okay, that's it. By the way, aren't you fighting over something, maiden or whatever?'

"'Well, we sent for her,' said the dragon, 'but the little misery is late. She always is.'

"'Dunno what gets into maidens nowadays,' said the hero, who was older than Mister Jon had thought. 'They aren't what they were. Let's not wait. Have I got this right, with the lance?'

"'Fine,' said Mister Jon.

"'My other profile is better,' said the dragon. They fixed that, and it turned out to be his most salable painting—he did several, with improvements and maidens and so on—but Mister Jon wasn't satisfied: the hero, and sometimes the dragon, always looked like himself. He hunted up other types of hero, and had the same difficulty. The subjects couldn't see it—they were looking of course only for their own selves and (of course) always found them—but Mister Jon saw it. It still bothered him when he arrived at the capital.

"There he consulted the Great Stone Face, which stands in a fine plaza in the capital of Peranelios and is the *twice-as-much* respected critic in the whole nation, since it never says anything at all. Its

manner of never saying anything conveyed to Mister Jon that the hero thing itself might be causing the trouble. Instead of heroes perhaps he ought to paint only the most noble, brave, and beatific people he could find. He tried that, earning somewhat less than before, though a number of nice people had nice things to say. You see, the trouble was—the trouble was—

"They all looked like him," said Frankie. "But the people he painted couldn't see it, right?"

"Right. He could. After a while he found out why it was."

"Guess you better tell me."

"He himself was the only person of any kind he actually knew. He could love others, and paint them too, but never know. He was hero, thief, beggar, dragon, saint. I forgot to tell you his last name was Everyman. Mister Jon Everyman."

"I guess it's a sort of a sad story." Frankie yawned.

"I suppose. Might not be all that sad after a good sleep."

"Might not." Frankie burrowed back into his blanket, where presently a large sigh tapered off in a small snore.

MY NOVELIST'S *privilege is to say that as he sat on there watching the fire and feeding it little twigs, until Bosco came to give him the wristwatch for his tour of guard duty with the Professor, Demetrios composed other endings for that story, some of them more*

suited to Frankie's youth—[how smart we think we are!]—and some not. I could give you a few, but I'm afraid of making you even more impatient. Not that I blame you too much—here we are into Chapter Eleven and I haven't even reached the point where I appear as a character. Never mind—better times coming.**

IN THE morning the mist had grown deep once more, and it was under the mist that the Company found the Old-Time road improving, becoming a decent small thoroughfare. Grass and weeds were beaten down though not destroyed, the more threatening saplings had been chopped off—road work, for which we may hope somebody got paid. The noise of waterfall diminished, subtly changed, as the Company moved on west: it was more like the protest of a river forced between narrow banks, and Demetrios could feel it as deeply as ever, a vibration in the ground.

Another crossroad angled in; half a mile further on, another, from the south. Along this, looming big and blurred in the mist, then sharpening to natural outlines, came a graying couple with a golden bird in a cage. They nodded politely to the Company, and the man asked: "Be you on your way to the Ferry?"

"If that's where the road goes," said Demetrios—for this morning Angus, drowsy and absent-minded

from a night of tender games, appeared to want Demetrios to be leader and decision-maker.

The stranger woman didn't like that answer. "Where else would it go?" she demanded, and she may have thought Demetrios or her husband deaf, for she repeated: "I say where else could it go?" Her man carrying the cage—they had no other baggage—smiled placatingly.

Solitaire left her place by Angus and chirped her lips at the bird, who broke into wild caroling under her gaze. "Give him here," said the woman, "I say give him here." She took the cage—no doubt the man really was deaf—and covered it with a gray cloth she had been carrying tucked under her belt. The singing ceased. "We'll walk a ways behind you good folk," she said. "That way he won't make so much trouble."

Frankie fell back presently to make friends with them, but they were embarrassed or afraid—(was it possible to be afraid of Frankie?—yes)—covering the bird again hastily because its music burst forth at his mere approach. Demetrios glimpsed his efforts, which won only tight-mouth mumbles from the woman, dim smiles from the man. Soon Frankie gave it up and rejoined the Company, baffled and rather angry; but whatever he said was for Garth's ears only. The couple plodded on ten yards or so behind, and no one else had turned up when they all

came down a long stony slope to the ferry-house.

It stood between fog-laced trees. Fog held the waters beyond it to infinity. The Company was hardly aware of the presence of the stream until they had reached the ferry-house itself; then here, magnified by the high bank, the slow great noise of it was all around them. As on the previous days, the fog appeared to be thinning off, yet never did, quite; or if it did, this was no more than the tantalizing lift of a curtain which for clumsy reasons of its own must come down one more time—

IF YOU ever got stuck with a part *In amateur theatricals (which haven't improved noticeably since the original carry-on among the Swiss lake-dwellers) you'll have noticed the mess we invariably run into with the damned curtain—sticks, comes down too soon on the tenor's neck, works any way except right—if there's a curtain at all; some try to get along without one, try to smuggle the cast in behind a screen till called for, and the fat one drops his spear, clank, clongle, and when he stoops for it his ass knocks the screen over and there they be—(the Swiss lake-dwellers always used a curtain)—what I'm wishing to convey is that if you've had this Experience it just might give you some sympathy with a novelist obliged to deal with the fog and stuff in this chapter—(I won't*

even have time for Mam Estelle)—when it would be so much simpler and safer to trot along with the nice swift-paced action story you thought, dear soul, you were going to get for sure this time—what a pity—

THE FERRY-HOUSE stood gray and old, the pier worn with traffic (yet no one else was coming now) and green in its sheltered parts with water-weed and mold. The furled sail of the ferry dripped condensing fog. But a cheerful lamp was visible through the in-shore window of the ferry-house. The Manager could be seen sopping up a lunch of fried egg with a piece of bread, wiping a gray mustache. His name appeared on a sign above the door:

DELAWARE CROSSING

(Washinton Slep here)

R.C. Noah, Mgr.

CUSTOM SAILINGS 10¢

Mr. Noah flung wide the door before they could enter, a gray titan dwarfing Bosco's mass and Demetrios' height. Brand cringed as Demetrios had never yet seen him do, recovering his courage swiftly but making no overtures of friendship though Mr. Noah was beaming after his grim fashion. "So wha'd'y want?" He was just a big, rude, noisy old man in a gray loin-cloth, with egg smears on his mustache.

"We're traveling west," said Angus. "When's your next trip?"

"Any time. I don't run no God-damn timetable. What's nice people like you want to go west for?"

"I came from there," said Demetrios.

"That's no reason. Nothing now except wilderness, after Penn."

"We don't like it where we are," said Bosco. "See? By the way, Mister, you seen or heard anything of an outfit called Gammo's Ramblers?"

"No."

"We're separate," said the woman with the bird-cage. "Here, take it while I get out the change." But she had to shake her husband's arm to get his attention. "I say take the cage while I get out the change."

"Needn't to be in no such rush, ma'am," said Mr. Noah. "We ain't gosempacing no place till I been to the john and back."

"Disgusting fellow!" But she said that under her breath, and after Mr. Noah had ducked back into his diminutive ferry-house.

"He ain't so long on politeness, it's a fact," said Bosco. "All's I done was ask a fair question." Solitaire too had shown a flare of anger, but at the touch of Angus' arm around her she relaxed, looking up at him in a haze of confidence. Bosco added: "Y' know, I ain't sure I could take that guy."

Frankie laughed. Demetrios said:

"Don't try, man." Frankie ceased laughing and moved nearer to Garth, who was at that moment the calmest of the Company.

Mr. Noah returned and strode down the narrow wharf, blocking access to his miserable boat by standing there with an open palm. The stranger woman moved in ahead, glaring at Angus though he had already stepped back for her. She placed a dime in Mr. Noah's hand. "We only got half of your outrageous fare. Supposed to be a nickel."

"For half I can take you half-way across," said Mr. Noah.

"I never heard such nonsense!"

"Or I'll take the bird in pay for the other half. Nice little bird like that would brighten up the joint."

"Well—all right. Give him the cage." Her husband smiled on gently into the fog. "I say give him the cage." She snatched it from him herself and gave it to Mr. Noah, who lifted away the cloth.

The bird cocked an eye at Mr. Noah and tenderly sang. "There!" said Mr. Noah. "There now!" He was still admiring his acquisition when Angus paid, but was attentive enough to notice the eight dimes. He gave one back. "Won't charge the dog nothing. He kills a rat or two it'll more'n pay his fare." Demetrios saw a red-gray slick-moving shape scuttle under a thwart as the stranger couple stumbled forward in the boat looking for the driest place to sit. "Be he a

good_ratter? The rats is awful lately."

"Oh, he's death on rats," said Angus.

"By God I could do with a good ratter around the place."

"I could never sell him."

"Didn't much think you would. He can still ride for free." They got no more conversation from Mr. Noah. He spread the soggy sail, pushed off, took the tiller, and whistled up a breeze—well, it had actually begun to blow, and favorably, about five minutes before he whistled, thinning out the fog into lazy-floating ghosts and spirits of sadness that made way for the advancing sail above gray water—

FOR THERE was always plenty of ham in Mr. Noah, otherwise the Delaware Crossing Corporation could hardly have kept him in that job as long as they have, and if he chose to make it appear that a minor shift of surface meteorological conditions came about in response to his whistle, his personal egg-eating will, I suppose he can be allowed that little vanity; especially since I am almost done with this part of the book, the fog part. On the whole you've been very patient, very nice. Thank you.

BRAND DID kill that rat, and the golden bird did sing—vigorously, after the sun came through enough to show evergreens and willows on the approaching bank.

A great river, though not the widest; the shore the travelers had left behind was not visible when they disembarked, but that was because of the fog lingering over there, evidently characteristic of this part of the world. The Company watched Mr. Noah reentering that fog-bank; Demetrios thought he heard the golden bird still singing.

Beyond the landing the Old-Time road continued, in better repair. No more fog. Every branch, every little stone and weed was washed in the clean warmth of afternoon. At the first cross-road the stranger woman said: "We go this way." She tugged at her husband's arm. He nodded diffidently to Demetrios; they were gone.

The Company had moved on a quarter of a mile, each heart following its own course in solitude, when Solitaire stopped in her tracks, eyes dilated. She had been walking with Angus, lovingly though without touching him. She swung about and ran back down the road a short way, and hurled her oaken stick savagely in the direction the stranger couple had taken. "*Fools! Idiots!*" She tried to shout more, but it strangled on the weeping in her throat.

Demetrios reached her first and held her lightly; sometimes in her rages she had torn her clothes, raked her arms with her nails. He felt her shrink, and again when Angus took her hands, but she

made no effort to break free. "What if the bird dies?"

"I suppose," said Angus, "some would say he was their bird."

"He was. But he sang for Solitaire. He sang for Frankie."

"Solitaire—"

"What do you mean? Who is Solitaire? O Demetrios, Demetrios, what if Solitaire lost her madness? What could Solitaire do without her madness? There wasn't any gang-rape, Demetrios. Why—why, she just strayed from Brakabin, got lost, the stupid thing, all the way from Brakabin because her stupid fucking mother told her to walk the stupid fucking dog, she would have had to go past the house where my—my—the house where my—"

She watched her tight hands relax as Angus rubbed them. He said: "The bird was singing when the ferryman sailed with him."

She nodded and smiled, brilliantly, rationally. But memory closed the door that some passion had briefly blown open. That was all the Company ever did learn of whatever world had made Solitaire whatever she was. Frankie recovered the oak branch and she accepted it. "O Brains of the Outfits," she said, "we start learning letters at the next halt, and it won't be easy."

"So what's easy?"

"That's my friend. Now Solitaire wants music."

As they walked on she swung her stick in rhythm with the old man's, having linked arms with Demetrios

as a free and independent spirit, and the Professor fell in behind them plinking a sassy march. Frankie darted in before them as a drum major, beating on the tin dish from his sack with his pewter spoon, and caroling ancient and venerable words in response to the Professor's tune:

"Mademoiselle from Armen-
tieres, parlez-vous?
Mademoiselle from Armen-
tieres, parlez-vous—
She's hard to curry above the
knees
But falls on her back with the
greatest of ease.
Hinky-dinky, parlez-vous!"

(Some verses have survived that even Frankie didn't know.) Garth whistled and sang a bit himself. Angus blasted away at a glass-blade set between his thumbs. Bosco pounded his chest and slapped his thighs, now and then going *boom!* for a bass drum, and Brand frisked about in astonished admiration, making dog noises off pitch. Thus it was that the Company came down in fine though informal style on the peaceable, prosperous, somewhat conservative Penn town of Trottersville.

The Old-Time road had petered out; through the trees could be seen a better, modern dirt road, with reasonable hoof-prints, sandal-marks, wagon tracks. As *Mademoiselle* brought them out on this they

saw, quite near, rooftops on lower ground, pasture fences, a church spire catching sunlight. Demetrios described for Angus the spectacle of men and dogs driving a herd of shoats down to the village, on the other side of town where a low hill lifted the road. Trottersville was a pigs and chickens town. A rooster crowed. Bosco smiled.

Trottersville, as everyone knows, was founded ages ago by a family named Trotter (or Trotters), but the only statue on the green is that of a pig, done in one of the late 20th Century styles to look like an egg-beater except from the south. The inscription in the pedestal reads MY THING, but this has been filled with putty and painted, so maybe it shouldn't be discussed, though it does keep showing through. From the south The Little Hog looks more like a pair of scissors upside down. Every weathervane in town is a gilded cock.

The Company made for the inn, Angus confident of the value of his Katskil money. The hostel displayed a sign of a boar's head, and carried medieval tradition further by placing an evergreen branch to project from the doorway and tell the illiterate that drinks were to be had here. Angus' money was good indeed, the loft was available with room for everyone including Brand, and the drinks were drinkable.

Best of all, Sawyer Finn's Circus was in town.

TO BE CONCLUDED



GALAXY BOOKSHELF

Theodore Sturgeon

READERS of this column may have been led to believe that, due to my preoccupation with the growing edge of sf, I lack reverence for the hard core, the "pure" science fiction which derives from the pure sciences. If so, I can understand it, but must assert that my philosophic posture in the matter is only one facet of my way-of-thinking about all things. The growing edge is a life manifestation, dynamic and changing, as is common to all living things. The established, the conventional, is subject only to refinement, and refinements of refinements, an activity suitable to the keepers of monuments and the polishers of tombs. To my mind, this is the province of

technologists and engineers, not of science and scientists. "Science" derives from the Latin *scientia*, which means knowledge. The seekers of knowledge come first, the devisers follow. Intuition (a species of creativity) precedes theory, theory plus reason produces hypothesis, hypothesis plus experiment produces hardware. Sf which is obsessed by hardware often extrapolates into the future by refining refinements, which is most gratifying to those who admire human ingenuity, who are, for example, awestruck by the legend of the American watchmaker who sent the "world's finest hairspring" to Geneva for the amazement of the Swiss, who sent it back by return

mail with five hundred holes drilled in it. Nevertheless, the extrapolation of hardware into the future makes it easy to commit the error of a 1900 artist who drew a city scene of that distant year 1950. Among towering skyscrapers not unlike contemporary ones, he had powered aircraft moving. The aircraft were blimps, the power-train, ending in quite creditable propellers, began with a tethered horse galloping on a treadmill. The word for that is (along with 'ingenious' and 'logical' and, considering the artist's difficulties, 'credible' and 'admirable') "quaint." So too is much of the celebrated sf of sf's most golden years; so too is much of the hard-core sf being written today.

Sf people—the very best writers, editors, and the top-level readers—long ago ceased to live in biographical time (the era in which "I" was born) and in historical time, but operate with geological and astronomical and cosmological perspectives. Such perspectives, though they may honor the cuckoo-clock ingenuity of the perpetrators, instantly wince at the presence of knobs, dials, and wiring in far-future devices. Reaction engines offend them, as do certain concepts of royalty and commercial profit extended into the far future. Such sf people do not know precisely what will replace these things, but they have enough grasp of evolution in all its aspects (including its ability to progress unevenly from

time to time) to know intuitively that they are as quaint as a horse on a flying treadmill.

Yet the monuments stand, and should be revered. If it were not for those who have gone before, the discovery that a stone can be thrown to kill something edible beyond arm's reach may have been made as recently as my father's time, and I might never know of it except that I had seen him do it. The same discovery may have been made twelve hundred times over twelve hundred generations, and might need to be discovered yet again a thousand times, were it not for my forebears and their ability to preserve knowledge and devise ways to transmit it. However tall we may be, our feet are on the shoulders of our predecessors, and it takes an especially disgusting kind of fool to pride himself on his altitude as if it were his alone. Therefore I view the reappearance of old hard-core, and the appearance of new hard-core, through a filter colored more with ancestor-worship than with mere nostalgia. My own personal debt to the old-timers of sf can hardly be assessed, and I am most pleased to acknowledge it.

WHAT brings this up is the appearance of two huge volumes *Before the Golden Age* (Doubleday, 986 pp, \$16.95) subtitled "A Science Fiction Anthology of the 1930s", edited and with autobio-

graphical introductions by Isaac Asimov, and *The Mote in God's Eve* (Simon and Schuster, \$9.95) by Larry Niven and Jerry Pournelle, a brand-new novel.

Before the Golden Age is uniquely and delightfully Asimov. Primarily, if I may override the good Doctor's astonishing (but, I hasten to add, utterly justified) ability to illuminate himself like a public building (and believe me, friends, there is no energy shortage that can darken those arcs)—primarily, then, the book is a much-wanted aggregate of the long-remembered, mostly long-lost masterpieces of ragged-pulp sf which fired up so many of the writers who, in their turn, gave their gold to the Golden Age of John Campbell's *Astounding*. How many who read these words recall the stirring of their blood, that special shimmering of the mind brought to them by Edmond Hamilton, Clifford W. Simak, Donald Wandrei? Remember Raymond Z. Gallun, Charles R. Tanner and the early John W. Campbell, Jr.? These and other of the great old giants (many of whom, by the way, are writing today) are represented here to rekindle the old sense of wonder in those who knew them when, and to show latecomers where it all came from. The big book is stitched together by interpolations of the almost eidetic Asimov's biographical recollections. He remembers, and shares the memory vividly and

touchingly—and at times hilariously—where he was, *who* he was, what he was doing and thinking and feeling as he encountered each of these 26 fine old stories. One can only be grateful. If you can't spring for the price—even though it's worth every penny—agitate your local library to put it in.

And now for *The Mote in God's Eve*. Let me say at the outset that I recommend it heartily as one of the most engrossing tales I have encountered in years. Anything this size runs the risk, purely by its capacity, of carrying more flaws than a slighther work, and it carries them all right. But the overall pace of the book, the sheer solid *story* of it, excuses everything. What fascinates me, what makes the book so well worth writing about, is that the skilled and knowledgeable Messrs. Niven and Pournelle know about the flaws, and in the course of the narrative excuse them all—all but one, that is, and that one is up to the reader's credence.

This is a First Contact story, and fully measures up to one of John Campbell's most seminal—and most difficult—challenges: write me a story about something that can think as well as a human, but not like a human. This they have done, and beautifully. Their "Moties" are as unusual an e-t as anything ever done in the field. I am not going to spoil your surprise at discovering their most outstanding physical uniqueness, but the

rationale for it is clear and compelling. All the hard science is good—the astronomy, the physics, the mathematical infrastructure. About the sociology I cannot be quite as accepting, and it is in the area of biology, so important to the sociological situation, that I cavil the most—and it is on a biological factor that the social and political and military situations absolutely pivot. I must ask the question: in a species so knowledgeable about its own terrible history and the causes of its terror, and at the same time so adept in the biological sciences—especially genetic engineering—why could they not have found a solution to their dreadful problem? The authors simply say they could not; and on that fact hangs the whole complex structure of the book. You believe this or you don't. Even if you don't, you are going for quite a ride.

So you see that the old, or Old Wave, or traditional sf is not dead. It can be resurrected and it can be re-done, and when these things happen, it can be deeply enjoyed. Let notice be served, then, that a predeliction for the growing edge does not in itself downgrade the importance of past majesties. To point out who it is that polishes the monuments is not at all the same thing as saying they should not be polished.

HERE I commit something I have never done before: rec-

ommend a book I have not yet finished reading. If I finish reading it now I'll jeopardize my deadline. It's D.G. Compton's *The Unsleeping Eye*, which so far seems to be the very finest thing this remarkable writer (*Chronocules*, *The Steel Crocodile*, *Synthajoy*, and *Farewell Earth's Bliss*) has done to date. I promise a full report in my next, but you mustn't wait a month, or a minute, to get into this beautifully written book. It's from DAW, at \$1.25.

UNJUSTLY BRIEFS: Due to a change in publishers, Orbit 13 (Putnam's, 250 pp., \$5.95) and Orbit 14 (Harper & Row, 210 pp., \$6.95) arrived on this desk close together. All originals by writers old and new, they are Best Buys whenever they appear. The Damon Knight name on them is like the "Sterling" on silver . . . *Future Without Future*, by Jacques Sternberg (Seabury Press, 210 pp., \$6.95. Translated by Frank Zero) is worth buying for a single long novelette, *Fin de Siecle*, which not only predicts horrors far surpassing anything Orwell ever thought of, but is cognizant of the probability of some now-unknown technology which can—will—affect the entire culture. Brilliant . . . Roger Elwood's original and scarifying antho *Future City* is now in paperback, (Pocket Books, \$.95) and worthy of a place on your keep-it shelf, with its bonus: a short after-

word by Fred Pohl which is almost poetic, almost hurtfully insightful . . . Norman Spinrad has compiled a beautifully balanced anthology "to provide the reader unfamiliar with science fiction an orientation in the field" and it does indeed, as well as being a treasure-box in its own right. Structured in three parts, The Golden Age, The Post-war Awakening, and The Full Flowering, its 21 stories and careful bibliography make it a Best Buy. It's called simply *Modern Science Fiction* (Doubleday Anchor, \$3.50) . . . Do not by any means miss *Patron of the Arts* by William Rotsler (Ballantine, \$1.25) who will be, very much to his own astonishment, I think, one of the big ones. To do that he doesn't

have to get much better than this. I'll have more to say about this book in my next, if I possibly can . . . Also by then I'll have received the rest of the 'year's best' books (which I have studiously never reviewed before) and will give you some odd insights on them . . . The sprightly, zany and sometimes grisly William Nolan is up with his own collection (*Alien Horizons*, Pocket Books, \$.95)—19 stories from his wide spectrum of markets, from *Fantastic Universe* to *Playboy* . . . and take note of two real curios: two non-sf books by Edgar Rice Burroughs, *The Oakdale Affair* and *The Return of the Mucker*. Oh he do write badly. Oh he do snatch you up and whiz you along!

★

★ ★ ★ GALAXY STARS ★ ★ ★

DICK HOAGLAND calls himself a "communicator," a science interpreter for the layman. In various planetaria he has held posts such as Curator of Astronomy and Space Science; Director of Public Programming; and recently, Coordinator of Public Affairs and Special Events at the American Museum-Hayden Planetarium.

He is the creator and director of the "Voyage Seminars" — cruise/conferences at sea. The first, "Voyage Beyond Apollo," included offshore viewing of the night-launch of Apollo 17. In January of this year the two-week "Voyage of the Comet" provided optimum viewing of the elusive Kohoutek.

Dick held the post of Science Advisor to CBS Special Events during the Apollo Program and worked closely with Walter Cronkite from 1968-1971.

He also worked with Arthur Clarke on a TV film based on Mr. Clarke's book, "Promise of Space." As Project Scientist he arranged for experiments conducted by Sheila Scott on her Equator-to-Equator Across-the-Pole flight in 1971. Also in 1971 he co-fathered "the plaque"—Man's first interstellar message, en route out of the solar system aboard *Pioneer 10*.

Dick is unmarried and lives presently in Norwalk, Conn. Asked if he has any hobbies, Dick says, "Only changing the world." Pressed further, he replies that he enjoys music (he was once a professional singer, recorded on Columbia Records), flying, sailing, and considers himself to be "a pretty good painter." Dick has also recently been named Science Editor for *Worlds of IF*.

*Have you heard the one about
the mother-in-law who . . . ?*



FAMILY PROGRAM

J. A. LAWRENCE

I

“**S**EE WHAT’s on TV, Norman.” Jean settled in her chair with a pile of flowered fabric on her lap and the old button box. Norman obediently went to the console, fiddled with dials. A troupe of hyperactive blue people in some sort of native costume appeared on the screen. He adjusted the color.

“That’s fine.” There was a silence filled only by the swirling sound of balalaika. Norman leafed through the program guide. “Hey! There’s an interview with Habib on Channel 11.”

“Norman, Momma’s enjoying the dancing. Aren’t you, Momma?”

The old lady sitting straight up in the easy chair smiled bravely.

“Never mind about me, dear, I’ll get along somehow,” she said, smoothing the patterned material of her dress.

“It’s those Russian dancers,” Jean stage-whispered unnecessarily. “Won’t they do as well as that Arab, dear?”

Norman said, “Okay, okay,” and tried to achieve something approaching equilibrium in the rocking chair. He reorganized himself

several times, then got up and went to the kitchen for a can of beer.

“Want some, anybody?” he offered.

“No, thanks,” said Jean. “Don’t forget Momma’s ginger ale,” she called after him.

Norman fetched the ginger ale with the requisite two ice cubes, which naturally meant getting out the ice tray, running water on it to loosen the cubes, replacing it in the freezer compartment, opening the bottle with the sealed screw-top which invariably cut his finger; nursing his wound he sat down again. He looked wistfully through the TV program guide. He thought, “Well, the paper will report the interview tomorrow if he says anything important . . . Goddamn it, why can’t she watch her own TV set? When she moved in it was all ‘I won’t be any trouble’ and ‘I’ll stay in my own little room upstairs and not bother you, you’ll hardly know I’m here’ . . . We bought her the set so we could have ours to ourselves . . . I wonder if she ever turns it on . . . I’d feel funny to go and turn on her set uninvited. If I ask there’ll be a scene . . . Come to think of it, did we ever invite her to

look at ours every night? She just—arrived. . . . Oh, well, I suppose she needs company . . . Somehow we don't seem to go up to visit her much . . . Hell, we don't need to. She's always here." He drew at his beer. Momma pursed her lips. The battle of "Norman's drinking" had been joined but never fought; Momma knew exactly when not to press an issue. She merely stopped whatever she was doing and listened to the beer being poured.

Jean, catching Momma's eye, announced hastily, "Momma, it's eleven o'clock. Shall I see you up to bed?"

"When you're as decrepit as I am you have to keep busy or you can't STAND it," said Momma.

"Now, Momma, it's getting late."

"There's nothing left for me but my family. I just have to depend on you, dear. And Norman."

Jean rose and helped her to the staircase. "Momma, we're not going anywhere. Goodnight now."

"I have nothing to look forward to, that's all." Momma's voice dwindled off.

Norman was standing, politely. "Good night, Momma." He dashed to the TV and pushed the button for Channel 11; too late, of course. He sighed and switched to a newscast; there might be a recap. If Habib had agreed to come to the White House, the Arab oil bloc's complacent monopoly might yet be broken.

"Honey, turn it down a little." Jean picked up the pile of sewing.

"Are you making something?"

"Just buttons on Momma's dress."

"Oh."

The newscast reported nothing on the Middle East; the war in Malaysia was, as usual, bloody. Some scientists had announced a new development in memory cells. He didn't catch it.

"There seems to be more news in automation," he said.

Jean looked up. "Anything wrong at work, dear?"

"No, no. Just wondering in general. Might affect us, from what little I heard . . . Unemployment's up again."

"So they'll step up the war. They always do."

"Mmm."

Jean put aside the dress. "I'm sorry you missed the interview," she said. "But . . ."

"I understand," said Norman. "I'm still understanding, so far." She smiled at him tiredly and carried her things toward the door.

"Bedtime?"

"I'll be along." He wanted another beer.

AT THE office there was a rumor that the business was either going to fold—or convert. Norman's job didn't bring him close to management; he shrugged. Engineering had been the field of the

future; here was the future and he often suspected it was beyond him. The computers for which he had been trained had been obsolete before he'd finished his degree. Now they were talking about the sixth stage, colloids no less. It sounded as if you'd have to have a biology degree to be an engineer next.

On the way home he stopped at a bar. What had he to look forward to at home, anyway? He couldn't even hold hands with his wife until after 11 o'clock.

"Rye and ginger, please." Transistors he understood. He might as well be into vacuum tubes. Microsynchs had taken him two years on the job to master; and now this.

"Just what is it the damn things can do now that they couldn't do before?" said a bellicose voice behind him.

"They judge," was the reply. Was the whole damned office in this bar? "Make decisions. Complicated decisions. Like whether or not to fire a man."

"Oh, God." A chair scraped the floor. "It was bad enough when we had psychologists all over the place. It was bad enough when we all got cards that only IBM and God understood. It was bad enough when half the business spoke dialects that the rest of us couldn't understand. I tell you the union won't stand for this."

"It won't matter. By the time they've got the kinks out nobody will need union men. The Black

Box will be running us all, buddy, men are too damned expensive. All they'll need will be designers and rock singers. We'll be getting plastic imitation gold-leaf doohickies on our car doors . . ."

Norman finished his drink. He wondered glumly how long it would take for this apparently universally widespread information to sift through the company to him. The typists probably knew already, they always did. He'd really be in the soup if he were fired. He wondered if they would do him the courtesy of a personal interview after eleven years, or if it would just be the blue paycheck instead of the yellow . . . they'd all be in the soup. He found himself visualizing breaking the news to Momma with intense, perverse delight.

"You're very late, aren't you?" Jean was surrounded by pieces of paper, writing busily. "I'll just finish this month's statement and get you some dinner. We ate hours ago."

"Isn't that Momma's check-book? Can't she do that herself?"

Jean laughed. "She hasn't been able to add since she flunked second grade. Poor dear, there's not enough in the account to risk mixing up the decimal places, till her dividend checks come in."

"Hmph." He really ought to have liberated a desk calculator when he had the chance, he thought. Probably wouldn't ever have another opportunity.

There was a stomping at the door.

"Hello, Momma, how was the bridge club?"

"When you're as decrepit as I am you have to keep busy or you can't STAND it," said Momma, shaking her umbrella over the hall rug.

"What's the matter? Did you lose or something?"

"Sometimes I think you don't care if I'm here or if I'm dead," said Momma, tossing her raincoat inaccurately at the coatrack. "Well, I won't be around much longer."

"Are you going someplace?" He wondered if his bank account could bear another Florida vacation. He had managed to make the last one appear to have come out of Momma's own account "to save her feelings", but this time, with everything so uncertain . . .

Momma sank reproachfully into the armchair.

"Here's your checkbook, Momma." Jean collected the papers and put them away. She turned on the TV.

Norman wandered around, bored with Doctor Kildare. The women were glued to their seats. The fifteenth handsome young man to have essayed that part in its long history smiled bravely as he pulled on his rubber gloves.

"Jean, I want to go for a walk."

"Okay, dear," she replied, not taking her eyes off the screen. "It's cleared up outside."

Norman looked at her hopefully; would she offer to join him? It obviously hadn't occurred to her. Oh, well.

"Uh . . . I won't be long."

Jean waved absently.

NEXT morning each of the desks bore a sealed memo. There was a subdued kerfuffle as the envelopes were torn open. Row after row of heads looked up and around, the few smiles vanishing as the smilers took in the stricken expressions on the faces of their colleagues. Nobody spoke. The union men rose in a body and left the bull pen.

Norman had been chosen. He would be retained. He would not be joining the Great Obsolesced—not yet. The union men . . . what use was it to strike if you weren't needed?

For the next six weeks classes would be held daily. In any case there was going to be a lag in orders while the customers waited to see what the new development would offer.

He was right about the biology. This molecular data storage system was an offshoot of DNA/RNA research. The capacity of the colloid was astronomically greater than that of transistors, and geometrically greater than that of microsynchrons. The programming would require no coding—the colloids could easily accommodate a voca-

bulary in any number of languages. Once the black boxes had been told what to do, no further programming would be required.

And he, Norman, was allocated a special code number for access to the Big C, the central computer which served not only his company, but all the U.S. Government offices as well. Security clearance, secret phone numbers, private telephone hookup to the Big C itself. He was on top of the world. It must be a sign; his luck had turned. He had been chosen and now he would see what he was made of.

He tried to explain it to Jean. She didn't really seem to take it aboard. But in his euphoria he felt he could cope with anything. And the training was fascinating . . .

"I'm so glad you're enjoying it, dear," she said.

"I wish you had more to enjoy," he said generously expansive. "You're always doing some damn thing for Momma."

"Well, she's my mother after all. Besides, where else could she go?"

Norman sighed. Unanswerable.

He did try to be kind. But his mind had become sensitized to repetitiveness. You only had to tell the black box once, and thereafter it would do or say the same thing over and over, or cause the same operation to be performed. While Labor was screaming its head off about human dignity, it was daily demonstrated that that particular quality was industrially unneces-

sary. He listened with new ears to the evening's conversation.

"Don't you want any cutlets, Momma? I tried a new recipe."

"You young people just don't understand the distress I'm having with my bowels."

"Did you take your medicine today?"

"You just don't understand the distress I'm having."

"Gee, I'm sorry, Momma. I made it special, no onions or anything."

"There's nothing left for me but my family. I have to depend on you for everything, dear. And Norman."

"Well, would you like some milk?"

"Oh, never mind about me. I'll get along somehow."

Norman got the milk.

"I just don't seem to have any appetite." Jean placed a bowl of custard in front of Momma.

"How was the office, dear?"

"Pretty good. I may have to do some traveling soon. I might even be transferred. There aren't many of us who know how to handle these things. Did I tell you . . ."

A plaintive "Why does everything have to happen to me?" interrupted him.

"But Momma," said Jean. "Nothing is happening to you. It's happening to Norman, and he only said maybe."

"There's nothing left for me but my family," said Momma tearfully.

"I have to depend on you for everything, dear. And Norman."

The baleful look accompanying this speech penetrated Norman's concentration. "Why, she doesn't like me either!" he thought. He had assumed that her gratitude, though ill-expressed, was real.

Jean said, "Well, we're right here, Momma."

"I don't think you really care if I'm here or if I'm dead. Well, I won't be around much longer."

"Oh, Momma, don't talk like that."

"I have nothing to look forward to, that's all."

"Where might you go, Norman?"

He replied absently, "Oh, I don't know yet. Possibly California, maybe only Delaware. Depends."

"When you are as decrepit as I am you have to keep busy with something or you can't STAND it."

"I'll play cards with you later, Momma." Jean cleared the table, loaded the dishwasher. Norman remained in the dining room, his notebook open. He glanced at his mother-in-law. A bright eye stared around the handkerchief, instantly resuming its pathos as he looked up. Jean came in, opened a deck of cards, dealt. Norman unfolded the evening paper. Habib was coming after all; the headlines were "OIL DEAL MAY GO THROUGH": "NEW HOPE FOR THE FUEL CRISIS"; the editorial was eloquent on the subject of warm winters. He wondered

if he might catch a glimpse of the Arab's car on Constitution Avenue. They needed oil now, not next year when the Alaskan pipeline might be finished.

The silence was punctuated by sniffs.

"It's not as if I were any trouble to you. I stay in my little room upstairs and don't bother you at all."

Jean sighed gently. "Your deal, Momma."

Later, in their bedroom, he said, "Jean, there'll be a banquet affair at the end of this course. Full dress and all. Want to go?"

"What about Momma?"

"Oh, for God's sake, she's only sixty-five and perfectly healthy."

"I know, but I'd worry. And besides, we'd never hear the end of it."

Norman muttered, "She sure has it made, the old—" Louder, "You plan to come along and we'll get someone in."

"I'd like that."

"I'll tell her tomorrow." He felt pretty good. It's amazing what a little self confidence will do for a man, he thought. All this time I've been afraid . . .

Carefully, he explained that someone would be in to keep her company. Carefully, he pointed out that Jean hadn't had a night out for months. Nevertheless . . .

"I don't think you care if I'm here or if I'm dead. Well, I won't be around much longer . . . there's nothing left for me but my family. I

have to depend on you for everything, dear. And Norman. Oh, why does everything have to happen to me?"

Norman said, slowly and carefully and very clearly, "We are going out, Momma. On the tenth of October. Four weeks from Friday. Period."

He opened the paper with a snap. Jean offered milk, custard and cards to no avail. Momma stomped off upstairs for the first time that Norman could remember.

He smiled in silent triumph. His eye lit on an elaborate advertisement.

DO YOU REMEMBER NANNIE?
HAVE A NIGHT OUT WITH NO
WORRIES
SHE LIVES IN—NEEDS NO ROOM
OF HER OWN!
COSTS ONLY PENNIES IN ELECTRICITY
ROBODOLLS, INC.
SEND US A PORTRAIT OF GRANNIE
WE GUARANTEE TO MATCH IT!

He stared at it for a long, long time.

Of course he sent for the brochure. Apparently this company had seized on the colloids before anyone else and, playing on the yearning of a democratic people for servants, had incorporated it into lifelike dolls programmed to tend babies, butle, clean, wait on tables. Nannies were complicated; they had to respond to visual cues, make decisions as to whether feeding or changing was wanted, do highly controlled lifting. These of

course really needed only the most minimal form, but mothers would never accept raw machinery as babysitters; hence the Nannie. The price was colossal. Norman sent for one on approval. He enclosed several photographs of Momma.

When the package arrived—at the office—he unpacked it in private during lunch hour. It was as advertised; a perfect replica of his mother-in-law. They had even captured the malicious glitter of her black eyes. He wondered why he hesitated to show it to Jean; it would be an ideal companion for Momma on the upcoming, and god willing, many other, nights out. Nothing pleased Momma more than Momma; she ought to be delighted.

But he did not take it home. Instead he opened the sealed mechanism, thus committing himself to interminable payments, and removed its voice-response spool. On the way home he bought a tape-recorder. This he did show Jean. And Momma.

After the usual "Oh, I don't want to . . ." and "Do I sound like THAT?" "Come on, say anything . . ." and the false starts, affected voices and all the fussing, at least he was able to leave it on for an evening without anybody caring. The usual conversational arabesques resumed their normal course.

"Do you want some meat, Momma?"

"You young people just can't understand the distress I'm having with my bowels. I just don't seem to have any appetite."

"Would you like some pudding?"

"Never mind about me, I'll get along somehow."

Norman listened, and recorded. In the office he fiddled with the tape recorder and the voice-response spools, and managed to get all ten of Momma's lines of dialogue on the spool in random order. He put them on several times, varying the sequence, enough to play for three-hour intervals. It was just like having Momma at the office. For some reason this amused him. He made the doll walk around, carried on long conversations with it in which he bombarded it with all his stored-up answers, arranged it to take in a certain amount of food—which of course would have to be emptied when no one was looking. Mostly it just sat and whined its lines. He still didn't take it home.

One night Jean was dressed in her hat and coat when he came in.

"Oh, Norman, Mrs. Judd is having the baby, Mr. Judd is out of town and she can't get anybody to mind the kids. I have to go help out. Can you cope with Momma? Just tonight?"

Sure that his new strength was up to an evening with his mother-in-law Norman assured her that all would be well. "I'll do dinner and all," he promised. "Don't worry."

"I may not get back till morning," Jean warned him. "God knows when Mr. J. will get home."

"Don't worry. Go do your good deed," said Norman.

"Dinner's in the oven, anyway," she said and dashed distracted out into the evening.

"Well, Momma," said Norman cheerfully. "We're on our own, eh?"

"It's not as if I were any trouble to you," she said flatly. "I stay in my little room and don't bother you at all."

"How about a little supper?" He carefully removed the casserole.

"I just don't seem to have any appetite."

"You are gracious, aren't you?" said Norman.

"There's nothing left for me but my family. I have to depend on you, dear, for everything."

The evening wore on and on. He found himself less patient than he had expected. Even the reminiscence of all the backtalk he was giving the doll was of less sustenance than he had hoped. He found his control slipping badly.

"When you are as decrepit as I am you have to keep busy or you can't STAND it," she began.

"Busy at what?" roared Norman. "You don't do a damn thing, you let Jean wait on you all the time, and as for decrepit there's not a thing wrong with you."

Shocked, Momma opened her mouth. She suddenly seemed to re-

collect that Jean was absent, and cried, "Oh, why does everything have to happen to me?"

"And nothing happens to you at all. You have happened to us and happened to us and happened to us, and you are just about ruining any life we might have had . . ."

But she had flounced off up to her room. Just in time, thought Norman. I might have . . . I might have . . . he sat down to think about what he might have.

Jean called in the morning. She would be home in time to see to Momma. Mr. Judd had arrived. Norman went to work with a good deal on his mind. He hoped Jean wouldn't have to go out again.

But three days later, on the third of October, Mrs. Judd was still in the hospital, Mr. Judd fell and broke his leg, and the kids couldn't get a train for Grandma's until late the next morning. Jean packed her overnight bag and swooped off.

This time, Norman came home with his large package.

"Momma, I'd like you to meet somebody," he called from the bedroom, after a while.

Momma came in and shrieked. Norman watched with satisfaction as she took in the details of the doll. It must be like looking into a mirror. He remembered that the mirror reverses the face; perhaps it was even more disconcerting to see one's image straight. Or would it be the same? . . . Except that the doll did not echo Momma's gestures of

dismay.

"Why does everything have to happen to me?" said the doll.

Momma toppled over in a faint. Alas, it was, it transpired, a fatal attack.

Norman was nonplused. He had not expected quite so—final a reaction. He went downstairs to think it over. He would have to call the doctor, the police, the undertakers; he would have to explain. They would find the doll. They would think him mad.

He'd better have a drink; it might help to clear his mind. He poured a good stiff whisky and sat down in the easy chair. It wasn't as if he were about to grieve; this would be a relief. Momma was going to leave them everything, wasn't she? Jean had said there wasn't much, but at least she would stop costing so much. But nothing would matter if they took him away . . .

Perhaps another drink. His mind seemed to be going in circles . . . Upstairs there were two Mommas . . . He topped up his glass.

After a while it didn't seem so bad. Nobody could fault his intentions, could they? Jean would . . . oops. He hadn't told her about the robot. She would naturally be upset about her mother. She would ask him how come he had brought it home the night she was out.

By the time the bottle was half empty, he had acquired the courage to go, perhaps not exactly walking, back upstairs. The doll was still

sitting in the chair where he had left it.

"You young people just don't understand the distress I'm having with my bowels."

On the floor lay . . . yes. He looked at it for some time deep in thought. If he could get rid of that, Jean would never know. He could leave the doll in Momma's place. *Would* she know? He had never heard what they said to each other during the day . . . He reached for the thing on the floor. His eyes said it was nearer than it seemed to be. He knelt down and groped. Cold. I must have been drink—I mean thinking a long time, he thought. He stared at the body again. What can one do with a body? If, that is, one does not want to call attention to it. He wished he had read more detective stories. He understood that this form of literature was filled with ingenious methods of disposal. He supposed bitterly that there wouldn't even be one in the house. Trust Momma to be uncooperative, even to her taste in reading. Mad scientists had bubbling vats of acid handily about, he recalled. Perhaps he was a mad scientist, but unfortunately he was not properly equipped. He shook his head sadly. All his life they had not appreciated him; now at this crucial moment he didn't even have any vats of acid.

Regretfully he abandoned this line of reasoning. He could dismember the thing with an axe and

put it in a public sanitation facility, if he had an axe. This suggested journalism; the phrase "apprehended" came to mind. That was what he wanted to avoid. Any further apprehension could be superfluous.

Could he bury it in the back yard? He eyed the corpse doubtfully. He thought not. And there were the neighbors . . .

The doll said, "I just don't seem to have any appetite."

He stumbled over and switched it off. He had now switched off all the Mommas. That called for a drink. He went downstairs again and saw to it.

He made his way uncertainly up the stairs again. A powerful conviction that the difficulties were more amenable to solution downstairs than up here swept over him. He would adjourn the conference to the sitting room.

"One step at a time," he said. The ambiguity struck him as exquisitely funny. He pulled the body by the arm and staggered unevenly over the door sill. "Bump-bump-bump, here comes Momma down the stairs . . ." he murmured. "Sometimes she thinks there's another way to . . ." Halfway down he stopped. Time for a little think. There wasn't much in that bottle. Depression times, everyone was giving less. Pay for a full fifth, and what do you get? A fourth. No, a sixth. He propped Momma against the wall and sat down on the land-

ing; closing his eyes for a moment. Now, where was he? Oh, yes, getting Momma downstairs. He clambered back up and went into the bedroom. Yes, there she was. Slightly haunted by a nagging sense of *deja-vu*, he picked her up, threw her limply over his shoulder, and reeling from wall to wall of the corridor achieved the staircase. He negotiated the top step, tripped, and Momma tumbled off his lurching shoulder and rolled to the landing.

Norman blinked. He seemed to be involved with a sea of Mommas. One, two, three . . . no more whisky for him tonight. There was one old lady sitting placidly against the wall and another old lady . . . or were there two? sitting placidly against the banisters . . .

It all came back to him. Of course, the doll. He picked his way down to the two lay figures, clinging to the railing.

"Well, Ladies, we must get on."

There was no response. How like them.

"Come, come," he said, very courteously. "Do shake a leg. We are all going downstairs now and have a little drink."

Reclining indolently, the Mommas ignored him. He seized the one on the left by the shoulders and hauled her to her feet.

"Come on," he said, standing her up; but as soon as he let go she slithered to the floor again.

The other one did the same.

He lay them side by side along the edges of the steps, feet pointing downwards. One by one he pulled them by their little black-shod feet.

Eventually he got them propped up side by side on the sofa. Wiping his dewy forehead on his sleeve, he rooted about in the cabinet and finally unearthed a small bottle of brandy. He offered first one and then the other the glass, to which neither paid the slightest attention.

He was hurt. "After all this trouble," he said reproachfully, "the least you could do is join me in a snifter." Well, since they refused to be sociable, he would have all the more.

He lit a cigarette and thought the matter over.

. . . One of these is a corpse and the other a very expensive robot. One of them has fallen down the stairs. If it was the corpse it hardly matters. If it was the doll, it may have been damaged. Then it cannot be returned even if I replaced its original voice spools, and no matter what I will have to pay for it. Therefore I had better check the doll and see . . .

My, how logically the brain worked when encouraged. He took a minute off for a silent tribute to the wonder of human consciousness.

"But there is a time for thinking and time for doing. First we must establish which of you is the real Mrs. Frebush."

He rolled up his damp shirt-

sleeves, drew sustaining smoke into his lungs, and opened the dress of the Momma on his right. Memories of happier occasions upon which he had opened the dresses of ladies seated on this very sofa flitted through his mind. Ah, those had been the days . . . when mother-in-law jokes were still funny . . . Back to business. Under the armpit he located the spring that opened the body cavity wherein he had passed so many entertaining hours with screwdriver and pliers. Yes. This one was the doll. The other was therefore the—er—Problem.

You wouldn't think it would be difficult to dispose of so small an object, would you. His mind was a desert of planlessness.

He paced. He lit another cigarette. He had another drop of the brandy, hoping for a recurrence of that moment of lucidity that had visited him so long ago.

As an answer to prayer, it came. He was a privileged employee with security clearance, wasn't he? He had a private telephone connection to the Big C, didn't he? He even had an emergency override code, and this was for damn sure an emergency. The Big C, crammed to the gills with all the information in the world, would save him; he loped to the hall phone. Fifteen digits to be dialed very carefully. Thank god he knew them by heart, the first twelve were his social security number. Lots of room for a slip in the last three, though . . .

but there was the signal. He spoke the word that would compel the thing to speak English. Then—

"Hello there."

"Good eve-ning, sir."

"Er . . . is it?" said Norman, momentarily shaken by the pleasant baritone, which sounded like somebody.

"The temp-er-a-ture is 18°, humid-it-y 40 %, wind vel-oc-it-y 10 . . ."

Norman cut off this delightful weather report in midspate.

"Thanks."

"Not at all."

The thing had better manners than anyone at the office. Briefly Norman wondered who had recorded its responses . . . No. But that Harvard accent . . .

"I wonder if you can help me."

"What is the na-ture of your prob-lem?"

"I seem to have this body."

"It is a com-mon phe-nom-e-non."

"I mean somebody else's."

"Do you mean you have transferred your con-scious-ness in-to a-noth-er bod-y than your own?"

"No, no!" Where would a computer get a notion like that? "I mean a dead body."

"The cus-tom-ar-y pro-ced-ure is to call the po-lice and the med-i-cal ex-am-in-er for your count-y."

"Yes, but I'd rather not. For reasons I don't care to discuss. How can I get rid of it?"

The smooth, courteous voice

ceased momentarily. Had it no answer? Oh, god, it would be recording this chat as it recorded everything. He must be sure to erase it, and that it was irretrievably gone.

"There is a cus-tom of bur-i-al."

"Won't do."

"Al-ter-na-tive-ly man-y per-sons opt for cre-ma-tion."

Norman thought rapidly. The incinerator? The neighbors again. The furnace was oil-fired and had an opening about six inches square. Set the house afire? Every feeling revolted.

"How?"

"You could con-sult the cre-ma-tor-i-um."

"No, no, they would bring in the police and all that. Try again!"

"Do you have an o-ven?"

The implications made his blood run cold. He took a largish gulp from the glass he seemed to be holding. This discussion was becoming entirely too macabre.

"Never mind," he said, and hung up.

He started toward what he took to be the sitting room door. Erasing! He had forgotten to cancel the recording! Hastily, he dialed again. This time there was a different voice.

"Yeah?"

"927-31-7253-444-934 Cancel program recorded from 2018 hours through, um, 2032," said Norman clearly.

"Wha'?"

"927-31-7253-444-934 Cancel program recorded between 2018 hours and 2032," he said very slowly and distinctly.

"Whaddaya some kyn-a nut?" said the voice, slamming down the receiver.

Sweating, he tried again. This time he did get the pleasant baritone. The Big C acknowledged the erasure, and thereafter emitted only silence when he asked for a replay.

Feeling rather pleased with remembering to cover his tracks, he started again for the living room. His feet were behaving oddly; the left kept heading toward the kitchen, while the right appeared to desire nothing more than a hasty exit from the front door. It took considerable sustained effort to get them both pointed in the right direction.

When he had negotiated the carpet he raised his eyes from his recalcitrant extremities. The two Mommas were still there. One, two. Between them on the central cushion of the sofa there had appeared a Hole.

Norman rubbed his eyes. It was still there. Growing.

"I don't remember that," he said. He drew nearer and peered at it. Something was eating the cushion from the inside. The Hole grew deeper as he stared, the edges of the shiny upholstery turning brown and crisp. Whatever it was was hungry.

His cigarette! He had dropped it somewhere when he went to the phone. Fascinated, he sat down on the coffee table and refilled his glass. The Hole went on growing. The cushion was now merely a rim, like a square tire. A very small thread of smoke had appeared.

"I am having a Fire," he thought foggily. There was something one ought to do when having a Fire . . . what was it? He looked around the room, hoping for a clue. Ah! The shades on the windows were up! The neighbors would see that he was on fire. He would have to take steps about that; he stumbled to the window and pulled down the blind. That would take care of *them*.

Solemnly he drank a toast to the strangeness of Life, and then poured the little remaining in his glass into the Hole. Pretty blue flames leapt out of it. Lovely. Oh, yes, water, not alcohol. He needed the alcohol more than it did. He bore his empty glass unsteadily to the kitchen, allowing his kitchen-oriented foot its head. He turned on the tap and meditatively filled the glass, rinsing it carefully. Balancing it with the utmost attention he wandered back to the sofa. Yes, it was certainly still burning. He poured the water in. It hissed. Very satisfactory. First visuals, now sound effects.

Perhaps it would speak again. He went back to the kitchen. Another brandy-glassful followed the

first. Terrific! And the Hole stopped expanding. He put his hand into it. Something bit him. More water . . .

After the fifth libation he felt satisfied that his Fire was out. He could now pull up the blinds. And get back to his Problem.

He contemplated the Mommas. Fortunately he had left the chest plate open on the robot. It was the other one, then . . .

Wisps of smoke seemed to be everywhere. Surely he had not lit another cigarette? He thought, deeply. A glimmering of light hovered on the outer edge of awareness . . . yes. It appeared that the garments of the Problem had too closely proximated the Hole. Perhaps the cremation question would solve itself without his intervention. Perhaps if he went to sleep now, the whole evening would turn out to be a bad dream. In the morning it would be all right. The more he thought about that the better he liked it. He pulled the shades again, just in case.

There wasn't much left in the brandy bottle. He might as well finish it up, first. He put some in the glass and some unintentionally on the table, and sat down to watch. It would be a shame not to know how the dream came out.

Maybe he had better pour some more water on it. He looked around for the glass. He'd had it a minute ago. Oh. Brandy in it now. Well, that was easily solved. He emptied

it and went to fetch some water. Then he sat comfortably on the coffee table and lit a cigarette.

It was really becoming quite crepuscular. Little promontories of emptiness edged with red light flickered over the clothing of the Problem. At the back of his mind there was something lurking that he refused to recognize. It had something to do with the oven, and there was a horror that would come of this . . . a smell. There would be a smell. There *was* a smell. Burning hair? Nylon? Very nasty; he didn't want to think about whatever was coming next . . . he fought back the intrusive, unidentifiable anticipation . . . There definitely was a smell. Like the handle of a saucepan left too long on the stove, like the old bathroom cup that had fallen into the incinerator . . . plastic . . . PLASTIC?

He dashed the cold water over the shimmering, smoke-shrouded figure. He stumbled to the kitchen, filled a bowl and threw it at the thing.

Something had given way. The chest cavity of the Problem had sprung open, revealing a familiar pattern of wiring, microsynchs and black boxery.

He backed off, muttering. He seized the empty brandy bottle and upended it in his mouth. Suddenly he was cold sober.

The two robodolls, one rather damaged, stared at him over their opened chests.

"I have such distress in my bowels," said a familiar voice.

"I think I've gone mad," said Norman conversationally, to himself. Then, "this is one lousy dream." He prodded the undamaged doll tentatively.

"It's not as if I were any trouble to you," it said.

"When you are as decrepit as I am you have to keep busy with something or you can't STAND it," said the scorched one, with a travesty of a smile on its mutilated face. It closed its chest and rose to its feet.

"I just don't seem to have any appetite," said the other, closing its chest and rising to its feet.

The hair on Norman's neck bristled. He backed away. How did you turn them off? He *had* turned them off—hadn't he? He couldn't remember . . . Side by side the dolls began moving toward him.

"I don't think sometimes you care if I'm here or if I'm dead . . ."

"Well, I won't be around much longer . . ."

Bright-eyed, the Mommas marched sedately after him as he fled.

The light tap-tapping of little old ladies' shoes persisted, up the stairs, along the corridor . . . he locked the bedroom door and pushed a chair under it.

Where had it come from? How long . . . Where was . . . JEAN! His head was hammering.

"Why does everything have to

happen to me?" fluted the voices in chorus, outside the bedroom door.

"I have nothing to look forward to, that's all."

"You know I'll leave you everything."

The sound of cackling laughter echoed and re-echoed chillingly. He had recorded no laughter on that tape . . . the handle of the door turned, resisted and suddenly spun loosely. The door scraped open.

Duralloy framework; Synthasteel muscles; mere flesh and blood far too weak to oppose such strength. They tripped in unison over the doorsill, the door drooping on broken hinges; laced black shoes marching over the roses of the carpet, each step bringing them nearer to the corner where Norman cowered against the wall, sobbing with terror.

"There's nothing left for me but my family . . ."

"I have to depend on you for everything, dear . . ." whined the tapes.

Everything went black.

THE quality of the darkness gradually changed. He was probably dead. Dragging his consciousness partly back from the hole into which it had escaped, he became aware that the darkness was actual. He wasn't dead. Very slowly and in mortal panic he felt himself for injuries. He was in bed,

naked . . . No, not naked. Something had been fastened on him with safety pins. Safety pins? . . . Nannies. He had changed the voices; he hadn't meddled with the actions. He had cried and they had changed him and put him to bed.

He began to laugh, and laugh, and laugh . . .

When a rather shaken Jean came to visit him at St. Elizabeth's, he stared at her wildly, and said only, "Go away. I don't know you. Don't tell me what you are, I don't want to know."

She couldn't even interest him in the big news, although she left the newspaper with the headlines "OIL DEAL FALLS THROUGH; HABIB DEPARTS IN HUFF! SABOTAGE?"

On the evening of the third of October, the White House had at last completed its delicate negotiations with the Arab, and ceremoniously recorded it with the Big C. Half-an-hour later, the entire agreement had vanished from the computer as if it had never been. According to the Big C. nothing at all had been registered between 2018 and 2032 hours, and Habib, deeply offended, had flatly refused to discuss the matter any further. His private aircraft was last reported heading toward Tokyo. The technicians were baffled.

It was going to be a long cold winter. ★

TELEVISION: NEVER-NEVER LAND AND CLARKE'S THIRD LAW

DICK HOAGLAND

GENE RODDENBERRY once told a group of us assembled for breakfast at New York's Explorers' Club, "Television's sole reason for existence is to sell something, anything!"

And this writer, several years later, told another group, this time an assembly of NASA types, science fiction writers, and social scientists gathered for an Information Interactions Conference, "As of now in the United States, about 90% of everybody gets about 90% of everything (information) through television!"

Combining these two assessments of the largest mass medium in the history of Man, one arrives at the inescapable conclusion that to be the Delphic oracle to so many, tele-

vision must have stumbled upon some magic formula. And it has. It is called, by those in the trade, the LCD—Lowest Common Denominator.

And just what, pray tell, do 25 million people (a nominally respectable prime-time audience) have in common, one with the other? My answer to this probably cannot be printed upon these august pages, but I'll give you a hint. Mr. Whipple occasionally succumbs to temptation over it.

It is not my purpose here to assail television programming, its banality, its superfluity, or its constant interruptions by "a word from our sponsor." That has been accomplished elsewhere and by critics better qualified, at least in the area

of "mainstream television." My objective is to wield an electron beam or two and direct them at a little recognized subtlety of broadcast communication and entertainment: Television, science fiction, and reality. In the context of this magazine, Reality I interpret to mean anything having to do with science, technology, and future-cum-present. That's where television is most interesting—and most dangerous!

Television as a medium is quite unlike any other invented for the communication of information or misinformation. Unlike books or even radio, little imagination is required to be totally convinced of a given reality presented over "the tube." And, unlike movies which require a conscious effort to partake of (at least a trip to the theatre), TV is an omnipresent commodity, so universal that its very ubiquity is taken for granted. Television IS—in almost every livingroom, bar, train station, airport, university commons, or location where there is human traffic. It is a universal eye upon the world, an ever present commentator upon all that is living or unfolding. If it isn't on television, it doesn't exist. It is Life reduced to a 19-inch screen (measured diagonally, of course), and conveniently placed Everywhere.

It used to be a favorite pet peeve of mine (alongside my pet peregrine) that educators would speak glowingly of the educational value

of National Educational Television. Their idea of "educational" television was to take one *bona fide* expert and place before one expensive-looking blue curtain. Add a blackboard and, perhaps, a pointer to complete the concept (theirs and, obviously, the producer's) of how to educate with a television set. The fact that it produced deadly-dull television programming and set back the idea of television as an educational adjunct by about twenty years seems to have escaped their attention.

Out of this inept beginning to the use of TV as an educational device, grew a pervasive feeling that ETV *had* to be dull or it wasn't educating! It wasn't until the beginning of the Nixon Administration and the advent of a rather innovative head of HEW, Robert Finch, that a new perspective, voiced by a national leader in education publicly proclaimed what many people had privately long been aware of: Any television educates—noneducational TV (then) best of all—by providing a *simulated reality* which allows the viewer to identify, role-play, and absorb.

Mr. Finch compared the six hours of enforced boredom spent in many a classroom to the *nine* hours spent daily before and after school, and came to the inescapable conclusion that children today are learning far more about the world through the random portrayal of TV than through the structured

environment of formal education. What he did *not* add, however, was the fact that, on the average, adults watch far more television than their children! What are *they* learning? And, equally important, who's teaching them?

In a broad survey of the world's religions, one finds a fascinating variety of names for the Creator: Jehovah, The Supreme Being, God, Allah, Tao, etc. Arthur Clarke once collected a significant number of these in a horrifying little work titled *The Nine Billion Names of God*. A group of monks (it seems) in an obscure monastery set high in the Himalayas (where else?) hire the services of an electronic computer to aid in the tabulation of all the known forms of address for the Deity. They succeeded, and in so doing, encountered a most unexpected eventuality. For those who haven't read this piece, I won't divulge the ending except to say that I don't think it would have worked. For nowhere, either in Clarke's enumeration or that of the monks did I see the word *Producer*. And without it, the monks' (and Arthur's) lists cannot be complete.

PRODUCERS are the gods of television. Nothing gets written, photographed, scripted, cast, shot, or aired without the expressed approval of these obscure but supremely powerful entities. A CBS producer, in my presence, once beat a telephone to death because

an operations-man cut thirty seconds on the clock and removed our program from the air prematurely. Another producer, out of a personal belief that living on the Moon was an impossibility, refused to air a guest whose technical authority and national standing would have given weight to the opposite perspective: If gods are regarded as whimsical, arrogant, biased and, in the end, all-powerful Invisibilities, then television Producers stand fill the description.

Talk about power! In what other profession can one man's (or woman's) concept of Reality become the model of thirty million other human beings? In what other profession can an entire Universe be controlled, from set to actors, from dialog to direction, and presenting through a medium tailor-made to convey the feeling of reality to so many—and from the *safety* (or sanctity?) of such *anonymity*? Quick—name the Producers of five of the leading prime-time network shows this evening. Now, name the Executive Producers! Not even the President of the United States has such power.

A few years ago, John Campbell voiced a slight amendment to the familiar saw, "Power corrupts, absolute power corrupts absolutely." John argued that it isn't so much power that leads to corruption as it is immunity. A powerful individual whose very existence is unrecognized by all but a few is, by John's

definition, corrupt. It was apparently a situation present in the White House and it is a situation present today in the never-never land of Television.

Having laid this background, it is now time to examine some specific examples of the synergistic effect of television omniscience, producer omnipotence, and public ignorance.

A few years ago, in an article dealing with science education in America, a science writer remarked that deliberate science instruction of the general public *a la* educational TV was a dismal failure. "On the other hand," he maintained, "give me a good writer, the cooperation of the producer of the Beverly Hillbillies, and a fictitious trip by that national phenomenon to Brookhaven or Oak Ridge, and I'll teach thirty million people more about nuclear physics in one week than *'Discovery'* has in ten years!"

I don't recall the Beverly Hillbillies ever visiting Brookhaven or (thank God) even an observatory. But, if they had, I am sure the script would have come out something like this:

GRANNY: Jed, woudja lookit thet water heater! Kin ye imagine chop-pin' enough wood fer that on a Saturday night?"

JED: Granny, thet ain't no water heater. The feller in the white coat . . .

GRANNY: You mean the funny doctor-feller with his prunes?

JED: Yeah, that's the one. He says thet ain't no water heater atall. Thet's an "accel-er-ator" . . .

JETHRO: Aw, Jed, he must be afoolin'. They cain't be no accelerator.

JED: And why not?

JETHRO: 'Cause he says it shoots prunes, thet's why. And besides, where'd they ever git a truck big enough fer an accelerator like thet?

You get the idea.

The problem, of course, is that if ever the "Hillbillies" had been set in a nuclear research laboratory, amid the huge coils of a proton accelerator, the last thing on the producer's mind would have been the enlightenment of the viewing audience as to the workings, purpose, or excitement of high-energy physics. It is even probable that the "acceleration of prunes" would have been taken quite seriously as a hilarious coincidence to be capitalized upon, but certainly not explained.

"But," I can hear you object, "the Beverly Hillbillies is not a show even remotely connected with science or technology. Of course, it wouldn't have given an accurate portrayal of life in a national research institution. That is not its purpose. It is supposed to entertain, not educate!"

Alas—my point, precisely. What my fictitious visit by Granny, Jed, et al. could have done for the image

of serious science in one show, *has* been done, quite inadvertently, to everything from the city government of Beverly Hills to the arcane art of banking itself. The point is not that the Beverly Hillbillies are going to destroy the credibility of these institutions . . . Ample public contact is available to provide feedback to counter that TV image (something, incidentally, which would be lacking in a show laid at Oak Ridge). The point is that television, *especially* through entertainment, shapes our total vision of society at a level so subliminal that most of us aren't even aware of it. Try driving through "beautiful downtown Burbank" *without* smiling the next time you're in Southern California!

Naturally, I am not really concerned by such obvious satire as the "Hillbillies." It is the "serious" television shows, particularly those with an integral scientific or technical foundation, which I believe we should examine. It is here, within the framework of a synthetic reality that I believe permanent damage to our society is being done. It is in this artificial Universe, created by the Word of the Producer, at whose Right Hand sitteth the Science Consultant (sometimes), that I believe the public is losing its ability, feeble as it has always been, to tell the real from the unreal, the possible from the impossible, and the present from the future. We have entered

the realm of Clarke's Third Law: "Any sufficiently developed technology is indistinguishable from magic." And Producers are the magicians.

In a civilization in which most participants have only the most distant awareness of science, while, at the same time, science has almost totally prescribed their lives, the blurring of public reality when it comes to science or technology is not merely annoying; it is frightening. Our society is basically divided by its schooling, into two cultures, according to Toynbee—the Sciences and the Humanities. The latter far outnumber the former, incidentally, in case you didn't suspect. It is from the latter that most of the so-called "intelligent" television viewers are drawn. It is also from this Humanities category that the overwhelming number of television producers springs.

This division, which begins in High School and rapidly becomes more pronounced in college, affects all who pursue any degree of higher education. It means that, at the top, society is split perhaps 80-20% against any real ability to evaluate scientific authenticity on television. But that's only the beginning. This top level is only about half of all television viewers, even in 1974. These citizens, with only a passing exposure to science (mostly in the form of a general science class) have virtually no foundation upon which to base a judgment of tech-

nical surroundings, props, or premises of television entertainment. And it is in this vast sea of ignorance that the developing *tsunami* of television science fiction is building. Producers have discovered, at last, the source of an infinity of plots—the Universe.

Heaven help us.

The following is, of necessity, incomplete. It is not in any particular order, nor is it catalogued according to network. All are equally guilty, although I keep remembering the story from CBS when Roddenberry got a turndown for *Star Trek* with the line, "We already have a science-fiction series, very similar, really. Called *Lost in Space* or something, I believe." It is merely a beginning.

Over ten years ago, I was introduced to the term "Cyborg" by a rather skittish (I thought) NASA Spacemobile (remember those?) teacher as we were being led on a mini-tour of one of NASA's chief contractors. What made me quite curious was the fact that, after apparently letting slip the fact that NASA was seriously considering such a thing, my guide refused to discuss the subject further. Needless to say, upon my return to the museum where I was a curator, I called a few people in Washington and dug out the complete story.

For those at my level of ignorance, a "Cyborg" is verbal shorthand for *cybernetic organism*.

NASA's idea was, simply, that there might be some environments which, in the future, it might want to explore where Man in his present form would be unfitted for on-site inspection. The solution, according to NASA thinking, was to marry the human brain with sufficient technology to carry that brain personally into any such environment, be it the Moon's surface or deep into the Jovian atmosphere. Thus the "Cyborg."

It was a very touchy subject. The spectre of "Frankenstein" lurks in the wings (thanks to that other set of gods, movie directors. But that's another article.) If the public, in the days when we were terrified about killing one normal astronaut, had gotten hold of the idea that NASA was seriously considering removing the brain of a man and placing it within a machine . . .

Now, it is 1973 (when the show begins) and, wonder of wonders, ABC has discovered the cyborg, NASA and all! Only, there have been a few changes, some good (thank our lucky stars) and some not so good. Enter "Steve Austin" astronaut *and* cyborg.

The Six Million Dollar Man, as our hero is called, starts every show as a normal astronaut, veteran of a lunar mission (remember those?) and now pilot of an experimental reentry vehicle. So far, so good. In fact, too good. Remember those overwhelming numbers of TV watchers whose closest approach to

science was a chapter on "Central Heating and Air Conditioning" in high school? They know we've sent men to the Moon (Walter told them so) and they know, now, that we're not sending men to the moon any more, that NASA has put them to work flying other things, right? Therefore, as Steve Austin gets into trouble, turns his flying bathtub upside down and tumbles across the screen (again, with actual NASA footage!), our unsuspecting audience falls gently over the cliff between today and tomorrow as (off-camera, over quick cuts of an operating theatre and various pieces of sensational hardware—an arm, a leg, etc.), we hear a voice suspiciously like that of Steve's future boss, Oscar Golman, intone authoritatively, "We have the technology. We can rebuild him . . . Better than before . . ." Cue music wind-up. Cut to Austin lifting a couple of tons, outrunning the Streamliner and, in general, looking very much as he did before. Freeze image over color diffraction pattern. Fade to first commercial.

Why am I disturbed?

Because Steve Austin is impossible. Now. And for many years to come. You know that, and I know that; but thirty million viewers who faithfully tune in every Friday night to see him put together just to knock over another building or derail another locomotive do *not* know that. It is irrelevant that the stories for this series seem to be re-

jects from Hertz rent-a-plot. The heart of the matter is technology.

Consider: Hundreds of thousands of veterans and an equal number of children live in the United States who are desperately in need of a breakthrough in prosthetics. People wanting to lead useful, productive lives and unable to because of the state-of-the-art that is too primitive to be anything but a clumsy imitation of nature—and is too expensive even so. Research in this and virtually every other area of science has all but passed from the private into the public domain, both in the U.S. and elsewhere. If it is not government research, directly supported by the tax dollars of 200 million "bosses," it is research funded through public campaigns, such as the March of Dimes. Consider the problem generated by Steve Austin's existence every week on network television, to a doctor working on advanced prosthetics. As he appeals to the public for increased monies to continue work in this urgently needed area of technology, he is confronted by a popular wisdom which sincerely believes that what he is attempting to accomplish *already exists!* They see it every Friday night. On television.

To the more skeptical viewer, the evidence that Steve Austin's one bionic arm, two bionic legs, and one bionic eye (infrared, twenty-to-one zoom!) actually exist can be inferred from past history. NASA itself has consistently tried to justify

its own existence partially on its "fallout" of advanced technology in other areas of human need. It is common knowledge that "atomic" batteries exist—why, (for the really astute) they're even powering that thing which just passed Jupiter, or something. Artificial arms and legs? Hell, you know what happens when you turn those NASA guys loose on a problem. After all, he is an astronaut, hero and all; NASA would certainly take care of its own, now wouldn't it?

Thus, through clever cloaking of the show's basic premise in the immense credibility of NASA ("the difficult we do immediately; the impossible takes a little longer"), we are left with a misapprehension: the military-industrial complex has developed a technology, with taxpayers' money, vitally needed by so many thousands and yet, apparently, unavailable to any save a select few.

Fantastic? Improbable? So was a flight to the moon. And Watergate. And they took place on television, too.

BUT LET US go on. One of my favorite examples of this telecasting of Clarke's Third Law began with an offbeat creation called *The Man From U.N.C.L.E.* (followed, predictably, by *The Girl From U.N.C.L.E.*) U.N.C.L.E. was an acronym standing for *The United Network Command for Law Enforcement*, a passable addition to

Interpol, *Smersh*, etc., at the height of the Bond era.

The setting was contemporary—"Somewhere." Somewhere in New York. Somewhere in London. Somewhere in the Arabian desert . . . UNCLE agents were the good guys, saving the world from the evil connivings of THRUSH (The Russians?). Week after week saw Napoleon Solo, hero with an unflappable air of cool detachment and Ilya Kuriakin, blond, Russian, and excitable, matching wits and hardware with the other side and winning. It was not the wits that worried me (or the lines, many of which were quite funny), but that hardware! It was the beginning of my foreboding over television's discovery of science fiction, although Asimov's term "future fiction" would perhaps be more appropriate. In fact, one of the major reasons for my misgivings then—and now—was the implied "present" (not future and, certainly, not *science fiction*). *TV Guide*, that bible of the channel switchers, always carefully labels these and other efforts which I will mention, as "adventure." Science fiction? Certainly not!

U.N.C.L.E.'s problem came down to one thing: communications. Each week, amid a flurry of exotic weapons (dart guns, I'll buy) and damnably noisy infrared sniperscopes (after all, if it doesn't whine, how're you going to know it isn't a *normal* telescopic sight?),

Napoleon and Ilya chatted back and forth, sometimes separated by whole continents, in dungeons, in airplanes, in submarines and—and—in the middle of the Greenland icesheet, halfway around the world! And they never had battery problems.

Not once, between Napoleon's romantic escapades, Ilya's propensity for getting into trouble, and Mr. Waverley's attempts to understand the situation from UNCLE headquarters back in New York over those incredible communicators was it ever explained *how* they worked. And in a city where a phone call across town was equivalent to electronic Russian roulette (sor-r-ry, the number you have reached will not exist until tomorrow . . .), viewers began to wonder why this great invention, certainly far superior to anything the phone company was peddling, was being suppressed.

They are still wondering.

After the demise of UNCLE, television seemed to recede from the spectre of future/present hanky panky and delved headlong into rewriting the technological history of a different era—the Past. A name totally unsung in the pages of the growth of the United States (considering how many inventions he whipped up in the nick of time to foil an equal number of malevolent plots to do us in, aided by equally ingenious technology) is that of Artemus Gordon, secret agent ex-

traordinair. The name of the show may have been *Wild Wild West*, but the real star was the technological razzle-dazzle dreamed up each week by Artie to get West out of one impossible situation after another.

This constant rewrite of history would have been too much for one lone science writer to stand, had it not, eventually, been for a pure stroke of genius on the part of someone (anyone but the Producer, that is).

In one of the later episodes, the indefatigable Dr. Lovelace, evil genius that he is, discovers a way into another dimension via a series of especially prepared works of art. Only at the end of the show are we shown that this alternate dimension is in actuality a series of alternate times. It then becomes obvious where Artie and the enemies of the young United States are getting their miraculous post-1880's technology—from the future; perhaps, even, from television itself!

By now television had discovered that spies, girls, gimmicks, and gall would stand even odds in beating the opposition in the frenetic ratings race.

ENTER and sign in, please, Hugh O'Brian.

This show, premiered initially as an NBC something Night at the Movies, was called, as a pilot, PROBE. In the series, this was changed to SEARCH. I will care-

fully refrain from the overwhelming temptation to term both titles apt description of a program looking for a reason to exist.

Of all the miscarriages of technical mayhem, I think *Search* (or *Probe*) was my favorite. For one thing, the sets reminded me of good old CBS Space Headquarters where I and a few dozen other television people got all the Apollo guys safely to and from the Moon. For another, *Search* had as a very visible star a somewhat crusty character played by Burgess Meredith who, for all the world, reminded me of someone I had known or worked with . . . Then it hit me. The anonymous had become visible. Ego will out! Meredith—argumentative, demanding, didactic, and often unreasonable (“I don’t care if you’re hanging off a cliff, give me a scan of that beach, Murdoch, NOW!”)—was the alter ego of *Search*’s Producer, whipping his team into line, driving toward an objective which would shower him with glory, sometimes at the expense of his team, not to mention that poor guy hanging over the cliff. Meredith reminded me remarkably of my old producer. All that was missing was the cigar.

The premise was simple. *Probe* Control, a sort of cross between NASA and the FBI, would hire out its services to investigate thefts or protect property from attempted theft by dispatching one or more *Probe* agents to the scene. Each

Probe agent, through a simple surgical operation, was fitted with an implant, a device permitting verbal communication back to *Probe* Control. So far, it all sounds like an improved version of UNCLE, complete with the new model communicator worn *inside* the ear this year instead of concealed in your pen. But *Probe* (or *Search*) was only beginning.

Search (or *Probe*) had beat the bandwidth problem. In addition to the implant, each *Probe* agent carried with him (or her; but I can’t seem to recall ever seeing a “her” *Probe* agent . . .) a classy little device cleverly called by the lab boys a “scanner.” A combination color television camera, infrared sensor (video), and vital signs detector (blood pressure, electrocardiogram, and Alpha, Beta, and Gamma wave sensor), this handy little gadget managed to transmit all this information back to *Probe* Control, yet was small enough to be worn as a ring when it wasn’t being worn as a pendant. Incidentally, since the majority of *Probe* fugitives were jewel thieves, the first thing to go whenever someone captured a *Probe* agent was (you guessed it), the scanner—that unobtrusive 100-carat bauble our hero was wearing inconspicuously.

This development always seemed to put a severe crimp in the even-tempered Mr. Meredith who, pacing back and forth between the red-lit consoles of the Mission Con-

trol-like set, would alternately reprimand the rest of the *Probe* team (which spent most of the show eavesdropping on our hero's romantic efforts via—you guessed it—the scanner) and our hero for getting the damn' thing stolen, again.

Hugh O'Brian as *Probe* agent Murdoch was forever getting into trouble as any good *Probe* agent was supposed to. Only, instead of letting *Probe* Control, via its computers, predictions, and interpretation of data, scanner-relayed, tell him what to do, Murdoch would often as not go off on his own. Having decided that a particular *Probe* Control instruction was idiotic, Murdoch would take off the scanner (a device somehow capable of beaming back to Control through solid rock, from the other side of the world, and in color), place it in his pocket and promptly cut off all signal from it and him until he chose to take it out again!

An eighth of an inch of breast pocket material capable of doing what 8,000 miles and several gigatons of granite were incapable of doing . . . All those weeks while our attention was on that scanner, it should have been on O'Brian's suit! That stuff would have made a great reactor-shield!

Again, nowhere was a mention made of *how* this hardware did what it did, although you got several quick shots of an AZUZA antenna on Ascension Island, im-

plying, I guess, that satellites were somehow involved.

I could go on. Oh, could I go on! But I believe you get the drift. Each of these shows, in its own right, could be very exciting, funny, and even educational. And that is my point. To untold millions of Americans, totally unsophisticated in the trap of Clarke's Third Law, the intricate gadgets, technical tomfoolery, and foundation of super-science have been taken at face value. The line between the capability of our technology today and its promises for tomorrow is in the process of being irrevocably blurred. It is all too easy to envision a scenario in the not-too-distant future, when some dedicated genius finally succeeds in perfecting the incredibly complex technical achievement of matter transmission. The announcement, made on the evening news, is greeted by hoots and catcalls from the inventor's unseen audience. They have, after all, seen this before—on *Star Trek*.

Another thought: the other day I was idly thinking about when all our greatest re-runs would hit the Far East markets—Hong Kong, Japan, Viet Nam, India, etc.—when a funny coincidence struck me. The re-runs of *Search/Probe* started in Hong Kong just about the time of Henry's first check-in at the Peking-Hilton.

What do you suppose "Clarke's Third Law" looks like in Chinese . . . ? ★



A STEP FARTHER OUT

JERRY POURNELLE, Ph.D.

TECHNOLOGY AND BRAINPOWER: TWO REVOLUTIONS

FOR MY SINS I have (or will have) by the time this is published) just finished a year as President of the Science Fiction Writers of America. Now that's a great honor, and one I appreciate, but it's also a lot of work. Unlike many writers' organizations, SFWA does not have a staff of professional organization operators. It's run by working writers, which is probably why it's as effective as many larger and better-financed associations. It's also why it burns up its officers.

One of the tasks of the President is to organize the annual Nebula Awards Ceremony. As part of Nebula Day we have a big program, and this year I managed to inveigle a number of scientists and astronauts to come talk to us. It seemed like a good idea at the time: get men who had been to the Moon to talk about "what it's like out there"; get important scientists to talk about "where do we go from here?" and have science fiction

writers as the audience.

It worked, but I didn't get to hear much of the program. I was too busy keeping it running. Consequently, this isn't a convention report, although I'll confess I'd hoped to get this month's column as a fall-out of Nebula Day.

I did notice one thing, though: the scientists were gloomier than the science fiction writers. Col. Alfred Worden, Command Module Pilot of Apollo 15 and an active duty astronaut loaned to us by NASA for the day, read poetry: his own, about the end of Apollo.

Dr. Harrison Brown, whose *Challenge of Man's Vast Future* has influenced me for 15 years, gave a brilliant talk about problems of the developing world—and how unlikely we are to solve them.

Even Bruce Murray, Cal Tech's man in charge of the imaging experiments for the Mariner/Venus-Mercury probe, had some downbeat notes in his talk.

The theme was "where do we go from here?", but there were times when it sounded a little like "Is there anywhere we can get from here?" I may exaggerate, but not a lot.

The last key-note speaker was Robert Heinlein: and away went the gloom. Man will survive. Here, elsewhere; in this galaxy or another, on this planet or another or on no planet at all, we're going to be around a long time. Mr. Heinlein has been writing that message for 35 years, of course; and he hasn't changed it.

All very well, but why are science fiction writers more hopeful than scientists? And have we any right to be hopeful?

* * *

Pick up any popular science magazine and you'll see marvels, not only in the articles, but in the advertisements. Things science fiction writers didn't dare put into stories taking place before the turn of the century are now for sale at prices we can afford. An endless stream of marvels, mostly available to the common man (at least the Western common man) pours out of technology's cornucopia.

But, some say, it can't last: we'll run out of energy. Yet there are many ways we can eliminate fossil fuels and still have all the non-polluting energy we'll ever need. They only take money and determination

to have them. I've discussed a few before, but it's worth reciting the list again:

Geothermal power

Power from warm water in the Tropics

Solar screens on Earth

Solar screens in space with transmission of power to Earth

Windmills

Fission

Fusion.

Of these, my favorite is the space-based system. Large solar screens intercept sunlight that would have fallen on Earth to begin with. We turn that light into electricity.

There are several ways to do this. One is direct conversion with solar panels. There are increasingly more complex ways up to and including intercepting the light with aluminized mylar mirrors, focusing it onto sodium reservoirs, and using hot sodium to boil water for conventional turbines in orbit.

We get the power down to Earth as micro-waves. I've seen designs for receiving antennae which run several miles on a side. They're a grid of wire mesh with holes about a meter square, held up three or four meters from the ground. The energy flux is low enough that cattle can graze under the antenna.

The elegant part about this system is that we've added no total energy to the Earth; we've merely had it arrive in a more useful form. We can even balance the total energy received: since our system is

not 100% efficient, we intercept a calculated amount of sunlight that would *not* have reached the Earth, enough to counter the energy we intercepted but didn't send down.

A solar screen orbital energy system would be a big project but of no greater magnitude than, say, covering North America with free-ways. For local situations we might also need fission or fusion plants, and some of the other alternatives such as warm water Tropical power plants; the point is, we have the technological capability to generate all the non-polluting power we want.

That's one revolution; let's look at another.

As one event of Nebula Day, Cal Tech's Jet Propulsion Laboratory loaned us Dan Alderson, an astronomer/programmer who has been mentioned before in this column. He brought along his Big Brain, the JPL computer that guides probes to distant planets and unscrambles the signals sent to Earth by the spacecraft.

It's quite a brain. It's also indicative of one of the most fantastic stories of the decade. Back in 1965, Mariner 4 transmitted twenty-one pictures at a rate of 8 bits/second. A bit is, as most of you know, a two-valued signal: either a one or a zero. To send a picture you break it into dots, and there's either dark or

light at the dot. Each dot is a bit; it took a long time for Mariner to send back each photo.

NASA then specified that Mariner 6 & 7 would have an improved capability: 256 bits/second. This wasn't good enough for the JPL people and their associates at Boeing, TRW, etc., and Mariner 6 flew with a "communications experiment" capable of transmitting back data at 16 *thousand* bits/second. The "experiment" worked, and that was the normal transmission mode. It could be risked because on-board computers were good enough to let the spacecraft controllers back on Earth switch from the "experimental" mode to the regular 256/second rate if necessary.

That's where Mariner 9 was when it orbited Mars: 16,000 bits/second. Mariner 10, the Venus-Mercury probe, got zero funds for equipment development; it had to go for the same price as the last one. But again Cal Tech and the others weren't happy, and played around with the system within the fixed price budget they were given. They succeeded in a normal mode of 22 thousand bits/second—and an augmented rate of 117,000. The faster rate has worked fine, and as a result Mariner 10 has sent back from flyby's as many frames of data as Mariner 9 got in nine months of orbiting Mars.

The computer at JPL has to unscramble that information. By the

way, the signal from the spacecraft is 20 watts. If you're reading this at night you're probably using a 100 watt lightbulb. The spacecraft uses 1/5 of that to send 117,000 bits/second over 100 million miles through space.

Each frame of data contains more information than the human eye can appreciate. The computer at JPL plays with the "pictures" (actually, of course, they're merely strings of numbers) to generate several presentations, some of them showing more features than an astronaut without a computer could see at the same distance from the target as the probe.

That's the computer Dan Alderson, courtesy of JPL, brought to the Nebula Banquet. Of course he didn't actually pack it up into his suitcase and bring it to the Century Plaza, but he might as well have. A couple of ordinary telephone lines to Pasadena, an ordinary TV set, and some black boxes to hook things to the telephone; add an electric typewriter much like the one I'm using now, and we had all the power of JPL's Big Brain at our disposal.

Most of the writers used it to play a Star Trek war-game, of course.

The point is, though, that no place on Earth is so remote that all the information available to Western Civilization (or Eastern, for that matter) can't be made instantly available there as needed. NASA

will shortly launch a satellite system for India that will, for the first time ever, put the central government into communication with the remote villages.

Within a very few years the entire world will be linked in one vast global-village network. At the moment the Soviet Union insists on retaining jamming capabilities and spends a lot of money each year to keep outside ideas from penetrating, but that's probably a lost cause. Incidentally, the Soviets insist that no nation has a right to broadcast anything another nation can possibly receive without the prior approval of the recipient nation's government.

One suspects that attitude is not going to last.

In the 50's I once had a desk calculator, courtesy of the University of Washington (and courtesy of the US Navy which was funding the project we worked on). It was the most expensive and complete desk calculator in the world. About forty undergraduates including myself blinded ourselves for several hours a day multiplying numbers with those beasts. We were doing something unique in history: inverting a 60 by 60 matrix.

We had to invert the matrix to get the equations for predicting grades. It worked, incidentally: we did invert the matrices, and the Grade Prediction program does predict grades. You crank in cer-

tain inputs such as high school grades and test results, and outcome predictions of your four-year average given that you elect any one of about 40 majors. That's right: a different prediction for each major, and the blasted things are pretty accurate, or were when I was there. The prediction can be upset by determination and hard work, or by the discovery of wild night-life and the game of bridge, but by and large if the prediction said you'd flunk out majoring in math, you'd better find another major.

In the 60's an aerospace outfit provided me with another desk calculator. This marvel clanked and clattered, but it was very fast, and had several memory cells as well as automatic square root and other goodies. The purchasing officer assured me it was the most advanced thing of its kind. The only thing better was a "real computer" which was way beyond my section's budget. As I recall, this thing was about a foot wide and two long, and stood over a foot high. Some of that was the tape printer, but most was the electro-mechanical brain. It cost over a thousand dollars.

Yesterday Hewlett-Packard begged me to buy at a recently cut price a pocket-sized machine that will do fifty times what my friendly monster would, and do it *fast*: or, if I liked, I could invest \$800 or so and get a programmable pocket calculator that will not only deliver logs and exponents and trig func-

tions but also decisions and branching; and it comes with a package of programs and a subscription to a programmer catalog.

Or, if I like, I can send to MITS (not MIT; a company in Albuquerque) and for \$400 I can buy two kits: one kit builds a desk calculator similar to the best non-programmable Hewlett-Packard, and the other builds a 256-step programming kit to attach to it. For \$400 I get something like the "real computer" my purchasing officer couldn't buy nine years ago.

I fully expect within a year to buy for under a thousand dollars a desk-sized computer that will equal the IBM 650 I learned on and which rescued us from myopic calculator-punching. The 650 took about nine hours to invert a big matrix, and had to store intermediate answers on punched cards; the gadget I'll probably buy won't even have to do that.

In less than 20 years, brainpower has become both physically and economically within the reach of nearly anyone.

Given energy and computing power it's hard to think of any real bottleneck that can't be avoided with rational planning—and we've the computers to help us do the rational planning.

Food? With plentiful energy comes all the food we'll need for a

long time. First effect will be fertilizer: it takes nitrogen (well, nitrates) to grow miracle crops, and nitrogen fixing takes energy (or a lot of time to let legumes do it by photosynthesis.) We've known how to fix nitrates for a long time, of course: the first time the Federal Government got in the dam-building business was in order to power a big nitrogen-fixing plant at Muscle Shoals. Of course, the nitrates were to be used for explosives . . .

After a few years of plentiful energy we can dispense with most croplands entirely. Artificial photosynthesis, the actual construction of edibles from air, water, a few chemicals, and energy, isn't very far away. At the AAAS meeting in San Francisco last spring there were several very hopeful reports.

Building materials? It's true enough that we've used up most of the easily available ores, but we've only started with deep mines. The South Africans are mining at two and three miles down right now.

For that matter, why are we so concerned with iron and steel? Aluminum is one of the most plentiful substances on Earth. Magnesium is in plentiful supply. Modern composite materials such as fiberglass and the plastics haven't even begun to be exploited. (Mostly, they can't: building codes haven't caught up to technology.)

It takes only energy, and perhaps some complex manufacturing processing, to get building materials.

Come to that, it takes only energy and some complex manufacturing processing to put together nearly anything we'd ever want.

We've work ahead to lick the energy shortage, but there are no real technological breakthroughs needed; only economic ones, and perhaps the determination to do it.

Even now, we have energy and computation power available to the masses in the US and much of Europe. Very few science fiction writers of the '40's dared predict such a world at all—and I can think of none who could envision such capabilities for 1974.

So. Why are the scientists gloomy? Why is there so much crepe-hanging when, looked at objectively, we have capabilities that as late as 15 years ago would have been thought impossible before 2000, if then?

That question has to be either stupid or rhetorical, right? What we worry about is endless: we've got the ability to Pasteurize the planet. The streets aren't safe any more. We've lost control of the government. The people who make the basic decisions about our lives are far away from us, and they DON'T LISTEN, nor will they LEAVE US ALONE.

In other words, suddenly I'm not writing about science any more, but

about politics, and I've sworn a mighty oath to keep politics to a minimum in this column.

I will suggest that for Americans, at least, we've got more control over our lives than any people ever had throughout history. After all, an Athenian boy could expect to turn out to defend his City every summer from the time he was 17 until he was 60; and in the years when there were no campaigns he could expect to work from dawn to dark getting food, shelter, and clothing. Many people still do.

And as to our technological marvels not working very well, I often hear such complaints as: "Why it takes an *hour* to complete a cross-country phone call!" "What with traffic jams and tower foulups we couldn't get from New York to Los Angeles in less than nine hours!"

And I remember the Good Old Days and just how long it took to fly from Seattle to Huntspatch (Huntsville, Alabama on the map) in a gooney bird, and making appointments for long-distance calls, and perhaps I don't see things the way some younger people do.

When you come down to it, many of our complaints stem from so many people being so well off. You can't afford servants nowadays: the servant class can make too much money doing something else (or nothing at all.) Many places formerly reserved to the rich are crowded because everyone can not only get to them, but afford the

time to go. And so forth.

Leaving politics out, the world is in pretty good shape when the lowest paid members of the working class have marvels available that the wealthiest and most powerful kings of history never dreamed of: rapid transportation, instant communications, computing power, enough light to see by even in the dead of night . . .

The Industrial Revolution, eventually and after setting human freedom back quite a ways at first, eventually gave leisure, shelter, and clothing to the masses. The energy and computer revolutions make it possible to give nearly everyone more actual freedom than *anyone* ever had before this Century.*

Is *that* what scares us?

*I include in modern freedoms: spectacles to free us from myopia; medical science so we don't have to accept bad teeth, constant nagging backache, consumption (17 of my granduncles and aunts died of consumption in the period 1900-1915), ague, rheumatism, etc., all regarded as inevitable even for the wealthy not so long ago; and, for some of us at least freedom from constant worry about feeding our families.

If you like you can add: stereo recordings, cheap books, cameras we can afford, etc., and generate a list of marvels that Grandfather would have regarded as magic. I wonder what he'd have done with such things? ★

THE AUGUST REVOLUTION

*It's not nice to fool around
with Mother Nature!*

MARY SODERSTROM



TIM HEARD the first shock before he felt it. It began like the rumble of a distant train. Then as it grew louder he saw the trees begin to sway and the earth start to shake. He was frightened.

LUZ HAD been damn mad when he had to cancel out on their trip together. She hurled a great string of Spanish curses at him over the phone when he called on Thursday to say that on Saturday the day they'd planned to meet in Portland, he'd be in Anchorage.

"But you've done the same thing," he retorted. "Remember that weekend when I had tickets to the jazz festival?"

"That was different. It was a medical emergency. They needed me at the hospital! All you're going to do is muck around with some evil underground test."

It was an old argument. He was a geologist and she was a doctor. And she could not see how nuclear tests designed to tap pools of natural gas or to harness heat from inside the earth to generate electricity could compare with a cardiac arrest of some kid at the county hospital in Reno where she was on the pediatrics staff.

He started to explain to her just how important and humanitarian what he was doing was, how necessary these last minute adjustments would be to the success of the Arctic Energy project, and just

what the project would mean to the welfare of millions of people. But she wasn't listening.

"No," she shouted over the phone. "Shut up. I don't want to hear any more. Do what you damn please. I'll go someplace where I'm wanted. After all it is the only vacation I've had since I started medical school." And she slammed down the receiver.

Okay, if that's the way she wants it, he told himself. After all she wasn't the only woman around. He should have known better than get mixed up with a Latin anyway. Spoiled and headstrong, even if she was damn smart. And if that weren't enough, she came from a family of Chilean left-wingers so every other week she was moaning about the current government role in Chile and how the U.S. had helped overthrow Allende and his Commie friends in 1973.

He put down the telephone receiver carefully, resisting the temptation to throw it across the room. He'd been warned, he knew. He had met her right after the right-wing takeover in Chile and she had been carrying on about how her father had supposedly died of a heart attack in that stadium where they'd held everybody. What a fool he'd been! But at the time he'd been touched by her volatile Latin sorrow.

So he settled his affairs at his private office, arranged things at the university where he taught part-

time, and caught a San Francisco-Anchorage flight. Serve her right if she didn't know where to get in touch with him.

THE FIRST tremor wasn't too bad. A couple of tree limbs came crashing to the ground, but from his window Tim didn't see flames shoot in the air which would have signaled gas-line breaks. After a few seconds the rumbling started again.

THE PROBLEM he'd been called in on was tough. Somebody had shown that for optimum effect the underground test ought to be located on an island fifteen miles to the east and five to the south—so the UN Atomic Testing Supervisory Team authorized a shift in the experiment even though it was only about three weeks before the authorized test date. The Atomic Energy Commission and Arctic Energy, the consortium of companies, had to bring in one hundred fifty highly trained construction workers and electronic technicians—all with Top Secret clearances—to make the actual shift. It was going to take them right up to the night before the test date to complete the new installation and hook up all the monitoring equipment.

Tim wasn't involved with that of course, but he spent a lot of time wandering around the construction

site, thinking about the work he was presented with. The questions were fairly straight forward—ones about how the blast would affect the adjacent oil field and what variations in air pressure and tides would do to the blast. Tim wondered briefly why they hadn't all been done before the decision to shift the test had been made, but then he got caught up in trying to get adequate computer facilities to solve them. The officials wouldn't let him tie into the Livermore complex or even the University of Alaska computer—something about security—so he had to crank them out on the antiquated model the AEC's expedition ship carried.

He walked around the five square miles of the little scab they called an island, watching the men work and figuring out how to pose his questions so the computer could answer them. It was July, too, and he'd never seen the Arctic summer before, so some of the time he admired the little flowering plants that clung to the rocks, and the birds, and the long, long days.

When he got back to Oakland on August 4th there was a huge pile of mail on his desk. Reports, letters about his last consulting job on the trans-Atlantic oil pipeline, journals. But as he flipped through the stack a post card showing an incredibly white beach with an unbelievably blue ocean in the background stopped him. He turned it over: "Miss you," it said in Luz's

nearly illegible doctor's scrawl. The postmark was San Jose, Costa Rica, where her mother and younger sisters lived now, having fled Chile.

He had to smile. She was quite a girl, all right. Bull-headed and hot-tempered—definitely not the sort of woman he ought to think about marrying, even on those rare occasions when mortality weighed and the thought of dynasty became seductive. Besides it wouldn't be sensible to become too attached to someone whose background and politics were so different. Not that he cared that much about politics—they bored him—but Luz did and therein lay the problem.

But, well, they really did enjoy each other's company. And other things. He started to call her, but the long distance operator was already there.

"Person to person call for Timothy Harvey."

It was Luz.

"Look, come up this weekend," she said after the preliminaries.

"Love to," he said. "I'm feeling horny too."

Instead of laughing she sounded angry, frightened. "No, not that. I want to talk to you."

HER FACE broke out in a grin, though, when he loped up the hospital steps, late Friday afternoon. She ran out to greet him, something she'd never done before. Tim surprised himself, too, be-

cause when he saw her coming he threw out his arms to catch her, picked her up and whirled her around. When he sat her down he noticed she was blushing.

"Sorry, Doctor," he said. "Didn't mean to make a spectacle."

"That's okay," she said. "It's good to see you." And then she clung to him a second longer.

Yes, there really was something bothering her, he decided as he watched her sit silently beside him in the car as they headed south to a campground on the eastern side of the Sierras. But they had set up camp and eaten dinner before she said anything. The sun had set behind the mountains, which rose abruptly to the west, and the sky was the pale transparent blue of twilight.

THERE were other people in the campground but the willows of the stream-bottom shielded them. Tim was tending the fire. Luz huddled next to it, shivering and sipping her wine from a metal cup.

He reached over to give her a hug. "Hey, you're freezing. Didn't you bring a jacket, Doctor?"

She looked up at him as if she didn't see him.

"There's a sweatshirt on the back seat if you want it," he added, turning to poke the fire.

She stood up and walked slowly over to the car. Just as slowly she opened the door, reached in and

pulled out the sweatshirt. She started to pull it on, but when she had pushed her head through she stopped, stood looking at the mountains. Her face looked more solemn than before.

"Can you predict earthquakes?" she asked abruptly.

"What's the matter, Doc? Afraid the mountains will tumble, Gibraltar will—er—fall?" he replied, expecting a grin.

"No, be serious for a minute. Can scientists predict earthquakes?"

He looked at her carefully. He'd seen her angry fairly often but she rarely looked as she did now. She was one of the least alarmist people he'd ever known. A doctor, for god's sake; trained to handle emergencies. Even if it seemed a stupid question, he couldn't dismiss it if it bothered her so much.

"No," he said. "Not with any accuracy. Some guys claim they can tell you there'll be one here during a given three month period or something, but they aren't very accurate."

"Nobody can tell you there'll be a quake of such and such a size tomorrow at 10 a.m. in such and such a place?" Her black, snapping eyes riveted him.

"No," he said. "—not that I know of."

She sat down heavily on a log and stared for a few minutes at the fire. Her silence weighed on him.

"Why do you want to know?

What's eating you?" he asked.

She looked up as if she were surprised he was there. "Oh," she said, coming to her senses. "It's nothing." Then she stopped and considered. "No, damn it. It's more than that." She reached out and touched him on the arm. "Can you keep a secret?"

His first thought was to laugh and tell her that his security clearance was higher than hers would ever be, but then he realized that might be just what she was concerned about.

"Is it something about Chile?" he asked, without thinking.

"Yes," she said softly. "I should have kept quiet. The others would have fits if they knew I was talking to you about earthquakes. She looked at him straight in the eye; "Can I trust you?"

Trust: what a word. He had never met another woman he liked as much or fit with so well. But he was what he was, and he had certain responsibilities to—well, it sounded maudlin, but to his country. And obviously a lot of things Luz believed in blinded her to what was best for his country—and for the world.

"I can, can't I? You won't start . . ." She watched his face carefully, then her voice trailed off.

"Yeah," he said, with sudden decision. "You can trust me. What is it?"

He walked up and down in front of the fire while she told him. How

she'd met a group of Chileans in Costa Rica who were planning an uprising on Tuesday, August 11 at 6:10 a.m. local time. How the date and hour were picked by Professor Ernesto Mendez, the Chilean geophysicist who now resided in Mexico City; because an earthquake of 5.9 on the Richter scale would occur in Santiago at that time. How the uprising had been planned to take advantage of the chaos the quake would bring. How they had a two-year plan to bring democracy and socialism back. And how Luz was leaving on the Sunday flight from San Francisco so she could help.

"It's going to be a slaughter if the earthquake doesn't occur but then they'll need me even more because they have hardly any medical personnel at all," she said. "I wanted to know what you thought, though. Just so I'd be prepared."

He stopped in front of her. She picked up a stick and threw it in the fire. "I also wanted to say goodbye to you," she said, very softly.

AS THE second tremor hit, Tim heard someone scream and then the pounding of running feet, as the someone tried to get outdoors. That was silly, his benumbed mind told himself. Better to stay inside in a solid structure than get hit by falling cornices and chimneys. But he had a hard time pushing

down the panic inside himself. And another part of his mind told him that it probably wouldn't matter where you were because the demons in the earth would get you anyway.

THAT night after they had made love in their tents Tim lay wondering if he would have Luz's courage. It was foolish; she was burning all her bridges, walking out like that. He ought to try to talk her out of it. What cause was worth throwing away your life? Besides, the new conservative government had things firmly under control, the newspapers all said. The only thing that kept him from arguing with her was the thought that he would like to be as determined as she.

So they spent Saturday and most of Sunday just being. It was fine August mountain-weather, cool in the evening, crisply warm during the day. They hiked most of the day, Saturday, carrying their lunch with them and stopping to eat it and nap by the side of a little lake surrounded by red and silver peaks. Young mountains, like the Andes, Tim caught himself thinking. Evidence of the strain that followed the shoreline of the Pacific from Tierra del Fuergo to the Aleutians, and then around through Japan and beyond. But he forced himself not to think about that, watched Luz curled up on a rock, dozing as if she had not a care in the world.

After breakfast Sunday—eggs and bacon and fried potatoes cooked over the open fire—they started back to Reno, where they stopped to pick up her suitcase, and then drove on to San Francisco airport. He could think of little to say as they stood waiting for the gate to open. He asked her if she wanted a drink, but she shook her head without speaking and stood looking out at the runway where the jet was being readied for passengers. She would arrive in Santiago early the next morning, after changing planes in Mexico City.

"Look," he said while she stood in the line for the anti-hijack search. "Be careful, will you?" He swallowed. "I'd hate to have anything happen to you."

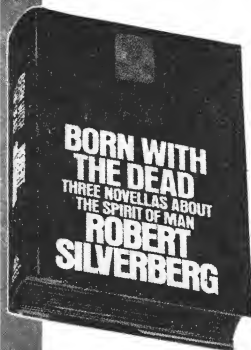
She looked up at him and smiled tensely, as if she were afraid she'd start to cry. "Sure," she said. "Don't worry about me."

He leaned over and kissed her quickly. "*Vaya con Dios*," he said, and turned and walked away.

He didn't think about the underground test until he woke up the next morning. It was scheduled for Tuesday, too.

One of the guys from the AEC called in the afternoon to see if Tim had keys to the earth-sciences building at the university. He wanted to watch the seismograph reader there record the shock waves from the underground explosion, but the building was usually locked after midnight, and the blast was sup-

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posed to go off shortly before 2 a.m., he said.

Two? Tim wondered. Of course, they'd been talking about a blast time shortly before midnight in Alaska; there was a two-hour time difference. Sure, he'd fix it so they could get in the building, he said, as he doodled with time zones on a sheet of paper. Two in California, midnight in Alaska, and 6 a.m. in Chile.

Six a.m. in Chile! That's when the earthquake was supposed to happen. He stopped. Coincidence again? Suppose . . . suppose Mendez was right. He had a good reputation. It was just barely possible that he might know something about the faults there that nobody else did.

It took Tim about two hours to make all the calculations, and even then it was all strictly back-of-the-envelope. But it certainly appeared that the harmonics of the shock waves from the underground test would be placed precisely to amplify a quake occurring twenty-three minutes later halfway around the world, to make a 5.9 quake into an 8.9 one—into a major disaster.

Poor Luz.

No, it couldn't be. There had to be a mistake.

Then he remembered the change in the test site. Another coincidence? But there was no question about it. Assuming he wasn't making a major methodological error, the shift of the few miles from the

first site made a huge difference in terms of alignment with stress-lines and faults in the Earth's crust. The angles were just enough different so that a quake in Chile, if there were one, would go unaffected by the underground test.

It looked like more than a coincidence. Somebody wanted a huge quake in Chile. Somebody who knew about the plans for the uprising? A disaster would be a great excuse for martial law, for taking over a country.

No, that couldn't be—he'd been around Luz too long. It simply was an accident, one of those terrible coincidental accidents that could mean the death of thousands and thousands of people.

He called up his friend at the AEC, to ask him if he knew who was in charge up at the test site. There'd been some kind of foul-up in the work he'd done earlier, he said, and he'd just come up with something the head man ought to see.

"What sort of thing?" his friend asked warily.

"Oh, something about seismic waves . . ." Tim said, trying to think of a way to protect Luz.

"And earthquakes?" the friend asked.

"Yeah," Tim answered without thinking. "How'd you know?"

"Look, Tim, forget about it. Don't stick your head in where you're not wanted." And he hung up.

TIM'S DESK started to slide across the floor on the third shock. It was quiet now in the corridor, but from the distance he heard the fire sirens, and, yes, it was unmistakable, an air raid alarm. A lot of good that's going to do, he thought. When things quieted momentarily he looked out the window again. There was a lot of smoke now and it looked like a part of the building next door had collapsed. And then the rumbling started again.

TIM SAT paralyzed for half an hour after the phone call, whispering to himself that it couldn't be. Then he decided that he had to get through to test headquarters anyway, to stall them for a few minutes, to postpone things just long enough to change the pattern of the waves echoing through the earth. For Luz, for all the others. And for himself. But the long distance operator, even though she tried for three hours, couldn't get through; all the lines to the test installation were tied up and the Anchorage operator had instructions only to let through top-priority military calls.

So he tried an old college buddy who'd enlisted in the Air Force and was stationed at the Pentagon, but the bastard hung up on him. Nor

could he reach the university's geology-department chairman whom he thought might have some contacts high up in Arctic Energy. And even his Congressman, his last resort, was on a fishing trip and wouldn't be back until next Friday.

It was nearly midnight by then and the only other thing he could think of doing was to warn Luz. It might be dangerous to try to locate her, but if she and her friends could tip people off, some of the death might be avoided as people went for higher ground or to the country.

All he had was an uncle's name, Felipe Sanchez, so he had the long distance operator try all of them in Santiago. While he waited he kept reminding himself that even if he did connect with her uncle there was no guarantee he'd contact Luz, too.

The eleventh Sanchez, unbelievably, was Luz's uncle, and even more unbelievably, she was there.

"Hello, Doctor," Tim said, not trusting himself to say more.

"Tim!" she cried. But immediately frost came into her voice. "What do you want?"

"I called to warn you," he started out but she interrupted.

"Thanks a lot," she said bitterly. "We know all about it."

"How?"

"Mendez is no dummy. He heard about the movement of the test a couple of days ago, and put things together. We're looking for who tipped off the Americans about the

coup." There was suspicion in her voice.

"Oh, Jesus, Luz, it wasn't me. I've been trying to see if the test can't be stalled. I had no idea that's what I was working on . . ."

"Sure, sure. You were just doing your job." She sounded as if she were trying to keep her voice hard, but she choked in spite of herself. "Rebuilding will be like starting the Twentieth century over again, you know."

"I know," Tim said. "How can I say how sorry I am? I'd never do anything to hurt you, if I could help it."

"But you did." She had control of her voice again. "Oh, go take some measurements or something. We've got work to do here—to save lives."

"Luz, forgive me," he broke in.

There was a silence at the other end of the phone.

"I want to see you again when it's all over."

The silence continued for a few seconds more. Then: "We'll see," she said. There was another slight pause. "Goodbye," and she hung up.

There was nothing more to do. He'd exhausted all the possibilities he could think of, so about one he went over to start his vigil by the seismograph. It was a gorgeous, moonlit night, and as he walked across the deserted campus he saw three separate showers of meteors race across the sky from the hills to

the bay. Falling stars; they were supposed to be lucky, weren't they? Then he remembered: fine scientist you are, grasping at straws like that, looking for lucky signs. They were just part of the August meteor showers. Came every year; perfectly good, scientific explanation for them. And then irony of being a good scientist hit him; good enough to help destroy thousands of innocent people, including Luz.

His friend was already in the building, watching. "Hi," he said, cautiously.

Tim grunted.

"You know it had to be," the friend said. "National security. Can't allow a bunch of Commies like that to be successful. Look what happened in Cuba. The boys have set it up so it'll be just a big enough quake so things will be just enough screwed up so we'll have to send in the Marines to rebuild and keep order. Minimum involvement. Minimum loss of life. The military people think it's a major breakthrough in strategy."

Tim glared at him and then turned back to the seismograph. The needle bounced back and forth gently, making lines like the little waves at the edge of a lake. Then there was a shock and the needle jumped. It was only 1:30 a.m.

Tim laughed out loud. My god, maybe things would be all right after all. Maybe somebody else had figured out what was happening and had been as shocked as he was

and had succeeded in short-circuiting something.

The man from the AEC looked worried. "Very strange," he said. "The blast isn't due for another seventeen minutes." He went into the office next to the reader to call someone. Tim stood grinning at the revolving drum and the bobbing needle without listening to the conversation. There still would be problems with Luz, but at least it wasn't as bad as it was. There would be a chance they might get together again. He loved her, he realized suddenly.

Then at 1:47 a.m. the needle took another sideways jump, this time completely off the drum. The time, Tim remembered, would be exactly right if the blast had gone off as scheduled, and not earlier.

"Hey," Tim shouted. "Come look at this."

The other man came out of the office, looking worried. "What is it?" he asked. There was anger and age in his voice.

"There was another shock," Tim said. "What's going on?"

"The boys say the first one was an impact shock from a pretty good-sized meteorite that hit down in Iceland."

"So?"

"You figure it out." The man fished in his pants pocket for a match, and lit a cigarette he'd been holding in hand. "Bloody cosmic accident."

"More amplification?"

"Yeah. This time we out-smarted ourselves."

BY THE time the fourth shock hit, Tim was surprised at how calm he'd grown. What would be neat, he thought, would be to be in a satellite and watch the whole panorama. A couple hundred million years of geological history occurring in a couple of days. It had taken about five hours for the movement to reach California, and before the electricity had been cut he'd heard on the little radio in his office that a fissure running the length of Iceland had opened and was pouring forth lava, while a row of volcanos had erupted, from Peru to Mexico.

Of course it had been an incredible oversight that nobody had figured in the effect a meteor would have—especially when the test occurred right in the middle of a yearly meteor shower. The big ones weren't that common—they usually burned up before impact. But when you're playing around with the planet's internal structure you ought to remember that meteor falls in the past have been associated with reversals in the earth's magnetic field. The earth may be a diamond: a tap there, a tap here—and the whole thing falls apart.

Ordinarily the plates of the earth's crust, wedged tightly together, release pent-up energy only in the relatively tiny kerks we call earthquakes. But this time the

combination of blast, natural quake and meteor impact had suddenly set the plates free. Before the movement had pushed and shoved its way north, Tim had a chance to figure out roughly where things would end up. South America's western shoreline would wind up a couple of hundred miles further west—even though the current coast region would be sucked back into the earth as the plate of the earth's crust carrying the continent was forced down as it met another plate carrying part of the ocean floor. The whole of California west of the San Andreas fault would move 430 miles north. Africa would swing around, touch Europe once again, closing off the western end of the Mediterranean. The Red Sea would become a mini-ocean. All low-lying cities, whether they were touched by quakes or not, would be completely wiped out by tidal waves. Some new islands would appear around the Hawaiian and Japanese archipelagoes. And volcanos all over the world, long thought extinct, would erupt.

God, what an exciting prospect! It would be great to be around when all the continents came to rest, to see what it was like. Of course it had all happened hundreds of times before since the breakup of the ancestral super-continent, but probably never as quickly, not even a thousandth as quickly.

But there was no way to escape

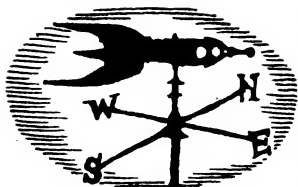
the Bay Area, of course. The guys at the University of Saskatchewan and the University of Manitoba, and the ones in Australia and parts of Africa would be luckier. They were in the stable interior of continents, rooted to the oldest rocks in the world, and they probably wouldn't be directly touched by any of the destruction. Things would be a mess for 10 or 15 years; all the supply routes and communication centers would be wiped out, not to mention hydroelectric lines and oil and gas pipelines. But they'd survive. It shouldn't be too hard for them to pick up the pieces and see if the theories of continental drift and plate tectonics were valid.

Tim stood at the window and watched the eighteen-story building across the road sway, then crumble. Well, he thought, I'm going to be as dead as Luz, if that's any consolation for her. He grinned at the grinness of the thought. Such a nice girl . . . She wouldn't blame him, not really.

And then he laughed out loud. Because to the list of areas which would be relatively safe he suddenly remembered you'd have to add the interior of the USSR and a good part of China, not to mention Siberia. Boy, won't the boys in the Pentagon just shit over that—if they have enough time to figure it out before the tsunami hits!

Oh, Luz, Luz . . .

And then came the fifth and (for him) final shock. ★



DIRECTIONS

Dear Jim,

I've been reading *Galaxy* and *If* for about 15 years (it doesn't seem like that long). I say reading, but that doesn't mean reading from cover to cover. For the last couple of years, since Fred stepped down as editor, I've just been reading the features and pretty much ignoring the fiction. These two June issues are like waking from a bad dream. I can read the whole magazine again! Thanks Jim.

Yours truly,

William J. Denholm III
808 Coleman Ave., Apt. 11
Menlo Park, CA 94025

What can I say?

This letter directs itself to Jerry's column in the May issue. Jerry's reply follows.

Dear Jerry,

Don't give up on the Belt yet! Heinlein's *Rolling Stones* had a pretty fair picture of a Belt civilization using hydrogen-burning NER

VA vehicles, back in 1952. It had no capitol; each rock or cluster of rocks governed itself. But the clusters were not isolated; they had radio, and today would have communications-lasers. They did not sell their ores through any given rock such as Ceres, but through whatever large rock happened to be conveniently located at the time, which is a whole 'nuther ball game.

As for Larry Niven's one-gee-acceleration ships and their enormous delta-vees, sure they could land on any planet they want. The point is that these are free-fall people who don't especially want to.

Yes, it would be chaper in fuel to have the capitol on Earth, but that missed the point entirely. Earth conditions are not asteroid conditions, and when somebody in the New York front office is making decisions for somebody else in a pressure suit, it is going to cost not only dollars, but lives, as that ignorant flatlander makes bad decisions simply because he doesn't know the territory. Far better to have the boss be a seasoned Belter located on an asteroid before somebody gets killed.

Pat Mathews
1125 Tomasita NE
Albuquerque, NM 87112

Good point. Obviously there could be *many* Belter civilizations, and my article said so; but any centralization is likely to have Earth as its focal point.

Of course my column was partly done as a tongue-in-cheek jibe at my friend and collaborator, Larry Niven, particularly his *Bottom of a Hole*; if you want to postulate that asteroid miners *like* it out there without gravity, and that we've physiologically developed ways to let them live like that, then of course another set of premises govern. Most science fiction stories, though, have simply assumed that celestial mechanics make the Belter Civilization more profitable, and indeed inevitable, and my article was directed at that.

As to government from afar, alas, I see little relaxation of centralizing trends. Colonial administrators found themselves chained to orders from Whitehall as soon as the undersea cable was invented; the war in Viet Nam was conducted on orders from Washington, just as the telegraph hamstrung soldiers in the last century. I agree that the man on the spot usually has a better idea of what's going on, but after all, the hordes of officials staffing the home office bureaus must have something to do . . .

Jerry Pournelle

Dear Mr. Baen,

I am not a Women's Libber, but a sf fan since I was in the third grade. I am now 32. I consider Andre Norton to be one of the best sf writers there is or has been. I do not see her or any other women represented in your magazine. Nor do

I see any mentioned among all of the glorious AWARDS you people give out to each other. So what's the story?

Dianna Prinette

Hmmm . . . it would seem that perhaps I have been a bit biased—four and one half of the eight stories in this issue were written by women. The cover is by Wendy Pini—as was the last Galaxy cover (her first two pro-mag covers). Let me quote my reply to a similar letter from June Worlds of If (which, by the way, was almost entirely male): “. . . I plan to publish what I consider to be the best of those manuscripts submitted. Period.”

Dear Editor:

Nominations are needed! I'm currently compiling an anthology of already published science or speculative fiction short stories to become a college textbook for training vocational counselors and therapists at the master's and doctoral level. These stories should help potential counselors become more future oriented.

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John Borden, Ph.D.
Associate Professor
Florida State University
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Well, THE DISPOSSESSED, by Ursula K. Le Guin, is not a short story—but, aside from length, I can think of nothing more appropriate.

Dear Mr. Baen,

I have been a subscriber to *Galaxy* for six or seven years, with a few gaps when I was out of the country, and for the first time I am moved to write to congratulate you on an issue and an apparent direction. For style, energy, and quality, the July *Galaxy* is unexcelled in my memory.

My favorite: J. A. Lawrence's "Opening Problem." Pournelle is marvelous though this month's catalog of wonders is diffuse compared to previous articles. Is it possible that the new *Galaxy* is ready to break out of the pulp cocoon and undergo the transformation to slick butterfly Panshin speaks of in "Directions?" I would pay more—provided the quality sf to fill it can be found. If your first few issues are an indication, Mr. Baen, then you are the man to find it.

Tim Mabee
116 East Price St.
Philadelphia, Pa. 19144

Dear Galaxy,

I read the other day in *Locus* that

a new editor was moving in, and was interested in new manuscripts by heretofore unpublished nobodies, such as myself.

I like the way *Galaxy* has been going, too. Doris Piserchia, R. A. Lafferty, Robert Sheckley, Joanna Russ, Sonya Dorman, and (most of all) Ted Sturgeon. I enjoyed Christopher Priest's *Inverted World*, too.

A couple of hopes: Fritz Leiber used to make frequent appearances in *Galaxy*. Has he devoted himself totally to Fafhrd and The Gray Mouser? Algis Budrys, where have you gone? Samuel R. Delany was never a *Galaxy* regular, but he, too, has disappeared. I miss the three of them very much.

I also like Ursula K. LeGuin, Harlan Ellison, Philip Jose Farmer, and James Tiptree, Jr., when they make their infrequent appearances.

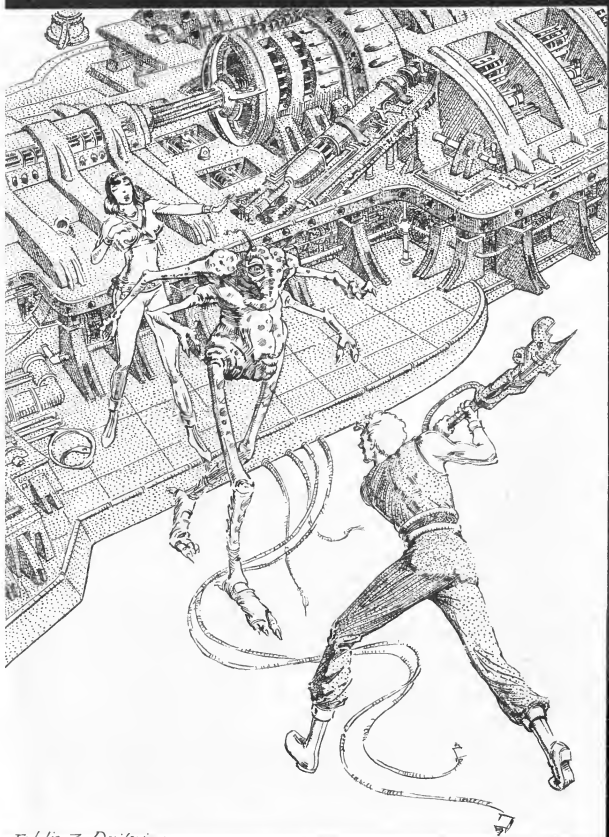
Also, I note with pleasure that Jack Gaughan is doing covers again. Hooray!

Anyway, please read the story.

Jeff Hudson

As per our previous conversation, your (revised) story is being run in August IF—as a collaboration with Dr. Isaac Asimov.

You will find Fritz Lieber in August IF, while Ursula, of course, has been represented in the previous issue... As for the other people you mention—I'm a fan of practically every one of them! ★



Fidelis Z. Danilowicz

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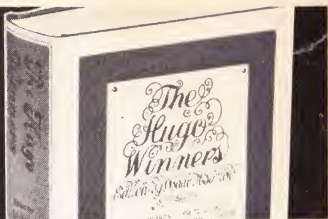
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